THE OLD TIMER'S BULLETIN

OFFICIAL JOURNAL, ANTIQUE WIRELESS ASSOCIATION, INC.

Published for the Old Time Wireless Operator, Historian and Collector

VOL. 28 FEBRUARY 1988 NO. 4

Rudolph Herzog and his collection of early broadcast receivers. See page 4.

Devoted to research and documentation of the history of wireless communications.

Member:
American Association of Museums
Regional Conference of Historical Agencies

ANTIQUE WIRELESS ASSOCIATION, INC.
HOLCOMB, NEW YORK 14469

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A.W.A. JOURNAL
"The Old Timers Bulletin"

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Lauren Peckham *(President),* Ormiston Rd., Breesport, NY 14816 – Tel. 607-739-5443
All official business, Conference and meeting activities.

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Financial reports, back issues of Bulletin.

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Old Timers Bulletin material, Museum artifacts.

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SILENT KEYS

Ed Sanders, W2VM
Bob Wright, W3KUH
Wm. Woodard, W9IWY

COMING EVENTS
ANTIQUE WIRELESS ASSOCIATION

MAR. 26	South-East Conference NORTH CAROLINA Charlotte, N.C.
APR. 23	A.A.R.C. - A.W.A. Scottsdale, Arizona
APR. 22-23	I.H.R.S. - A.W.A. Meet Ft. Wayne, Indiana
APR. 30	A.W.A. NEW JERSEY MEET Tranquility, N.J.
MAY 7	Local A.W.A. MEET Holcomb, N.Y.
MAY 20-22	ARRL Atlantic Convention Rochester, N.Y.
MAY 21	S.C.A.R.S. - A.W.A. Meet Southern California
MAY 21	N.A.R.C. - A.W.A. Meet Bloomington, Minnesota
JULY 15-16	South-East Conference in FLORIDA
AUG. 6	N.F.W.A. - A.W.A. Elma, N.Y.
SEPT. 21-25	NATIONAL CONFERENCE Canandaigua, N.Y.
OCT. 19-22	1929 QSO Party
NOV. 6	Annual Meeting 2 PM, Sheraton Inn Canandaigua, New York
Other meetings to be announced.	

Effective immediately all

DUES and ADDRESS CHANGES

must be sent to the following address:

ANTIQUE WIRELESS ASSN.
BOX "E"
BREESPORT, NY 14816

AWA NETS (EST/ESDT)

PHONE (SSB)

Sunday: 7247 kc. at 12 noon
3867 kc. at 5 PM

Tuesday: 14274 kc. at 2:30 PM
3837 kc. at 8 PM

Mon. -Wed. -Fri.: 3867 at 9:30 AM

CW-- 3584 kc. 4 PM daily
First Wednesday each month at 8 PM

ASSOCIATION NEWS

Report by Cicely Blossom-Smith

EDWIN HOWARD ARMSTRONG

December 18, 1990 will be the 100th anniversary of the birth of Edwin Howard Armstrong. In a reminder of its significance, T. Mitchell Hastings, president of the Armstrong Memorial Research Foundation, has stated, "From 1912 until his death in 1954, the genius of Major Armstrong was behind most of the truly important advances in what we knew then as radio or electronics and, now, as telecommunications."

The foundation is planning a campaign to increase awareness of Armstrong and his accomplishments. As Mr. Hastings says, "His name was never a household word and recognition of him decreases each year. The world should be given the opportunity to understand his contribution to its future."

Educational grants, lectures, awards for broadcasting excellence and assistance for school radio stations are the main purposes of the Armstrong Memorial Research Foundation. Anyone who wishes to participate in these worthwhile efforts or needs more information is encouraged to write:

T. Mitchell Hastings, President
Armstrong Memorial Foundation
Room 1342A, S.W. Mudd Bldg.
Columbia University
New York, NY 10027

A.W.A. has declared 1990 as the Armstrong year. The Museum will feature Armstrong personal artifacts and equipment using his inventions. In addition, his contributions to radio will be the theme at the Annual Conference.

RADIO AGE –

is another monthly publication with contents directed toward the radio collector. *Radio Age* has been published since 1975 and prints articles on radio history and restoration plus several pages of free want ads. Sample copies: $1.50 – Subscription: $16 first class mail or $13.50 second class mail. Write: Radio Age, 636 Cambridge Road, Augusta, Georgia 30909

AWA INTERNATIONAL REPRESENTATIVES

Australia – Ray Kelly
Austria – Franz Mock
Brazil – Carlos Fazano
Canada – Fred Hammond, VE3HC
England – Tony Constable
France – Guy Biraud
Germany – Rudy Walz
Israel – Joe Marsey, 4Z6JM
Japan – Taizo Arakawa, JA3AER-N2ATT
New Zealand – John Stokes
Norway – Kaye Weedon
Switzerland – Max deHenseler, HB9RS
Sweden – Bengt Svensson

1988 CONFERENCE PROGRAM

The committee is already working on the 1988 Conference program. Following are some of the subjects scheduled:

-- **Unusual Radio Collections in Italy**
Bob Lozier (Monroe, N.C.)

-- **Collecting and Identifying Silver-Marshall Products**
Larry Flegle (Atlanta, Ga.)

-- **The KDKA Story**
Dick Brewster (Pittsburgh, Penna.)

-- **High Voltage Techniques** (Demonstration)
Jim Hardesty (Ithaca, N.Y.)

-- **The Microphone: Development and Identification**
Bob Paquette (Milwaukee, Wis.)

-- **Vacuum Tube Seminar: Unusual tubes and their value**
Lauren Peckham (Breesport, N.Y.)

OUR COVER features Rudolph Herzog and his collection of early receivers most of which were manufactured between 1923 and 1929. His home is Hemmingen, West Germany where he is an engineer by profession and maintains a small company specializing in digitial measurement. Rudolph recently replaced Rudiger Walz as editor of the German club's paper called FUNK-GESCHICHTE. His amateur call is: DJ8MI

ASSOCIATION NEWS

1987 ANNUAL BUSINESS MEETING

The Association's Annual Business meeting was held November 1 at the Sheraton, Canandaigua, New York with President Peckham presiding. A brief summary:

- Incumbent officers were re-elected except Ken Gardner and Ray Leigh who for personal reasons asked to resign. Their positions were filled by Alton Bowman and Mani Pires. Bowman is a former member of the operating staff of stations WHAM and WCGR and retired from the New York State Police Radio. Pires recently retired from the Hewlett-Packard Corporation and is most knowledgeable on instrumentation.
- President Peckham reviewed the recent Conference and other activities including future meetings. Several suggestions were made to improve activities.
- Treasurer Deeley gave an extensive report on the Association and Museum financial status. A summary was distributed. He noted that income and expenses had not changed much from the previous year.
- Curator Kelley reported on Museum activities and noted attendance was again high due to advertising and publicity. Accessioning, restoration and storing equipment was continuing in the Annex where space is at a premium. A committee is working on this problem.
- The Association's attorney, Sherwood Snyder, reviewed the present status of the Association's State Charter as related to the Museum. He is in the process of renewing the charter.
- Recognition was given to Joyce Peckham for her work in handling all membership records and dues. It was moved she be given the title of Membership Secretary.
- The Association's editor (OTB) stated he would like to resign in order to devote more time to museum operation and programming. He gave a one-year notice after which time Bill Fizette indicated he would take the post of editor.

-- **Dick Ransley, Secretary**

OLD TIME ●●●●● TRANSMITTING CONTEST

We need your log for the recent OT Contest no matter how small a score. Send to: W2BGN 42 Oakdale Ave.S. New Hartford,NY 13413

INFORMATION ON RADIO CLUBS

In the past year I have made note of at least 40 clubs devoted to historical radio and collecting. Excluding clubs in foreign countries, most United States organizations are regional with local participation. Some States have several clubs such as New York with four and California with three. Most, however, have only one or none.

Members have asked for information on a club in their area. I haven't been too helpful. Officers and addresses are constantly changing and unless I have been corresponding with an organization, I cannot give the information they seek.

On several occasions I gave a location only to find later the club was defunct or had a change in officers and a new address. What I am trying to say is, I do not have a current club listing so can't be of help. Sorry. — *Editor*

BACK ISSUES

The following OLD TIMERS BULLETINS remain in stock. Make check out to A.W.A. and mail to:

Dexter Deeley
8 Briar Circle
Rochester, N.Y. 14618

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17-1	22-4	25-4	28-2
18-3	23-1	26-1	28-3
19-4	23-2	26-2	
20-2	23-3	26-3	
20-3	23-4	26-4	
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A.W.A. ACTIVITIES

ARIZONA

Arizona Antique Radio Club
and
Antique Wireless Association
Spring Meet, Saturday
APRIL 23

Location: Scottsdale, Arizona

All AARC and AWA members are urged to attend. A fine program is planned for the collector and radio historian including a special feature:

"The British Collector"

A slide-tape presentation made in England showing BVWS activity, Science Museum, Marconi Company and selected early British receivers.

A "*Flyer*" with all information will be mailed to members in Arizona and nearby states in late March. Last minute details may be obtained from: George Fathauer, 1550 N. Bel Air, Mesa, Arizona 85201

CALIFORNIA

Southern California Antique Radio Society
and
Antique Wireless Association

ANNUAL AUCTION
and
Flea Market

Saturday, MAY 21

This is one of the big ones on the West coast with plenty of action. Announcements will be sent to all area members. Additional information in the May *OTB* and *SCARS Gazette.*

MINNESOTA

Northland Antique Radio Club
and
Antique Wireless Association

"RADIO DAZE"

Saturday, May 21

Hotel Seville, 8151 Bridge Road
Bloomington, Minnesota 55431

This promises to be one of the big events of the year – a full day of selected programming for the collector plus a special tour of

JOE PAVEK'S NEW MUSEUM

Flyers will be sent to all members in Minnesota and nearby states. For additional information, write:

Jim Thompson, Box 18362
Minneapolis, Minnesota 55418

FLORIDA

The Annual AWA Southeast Region Conference normally held in Georgia has a new location this year:

TALLAHASSEE, FLORIDA
JULY (*Date to be announced)*

An excellent location has been selected near a beach. Complete information in the May *OTB.*

All the usual attractions for the collector plus fun and vacation for family members.

Larry Flegle and Don Patterson are in charge. "*Flyers*" will be mailed to all members in nearby states. We would like to see a good turnout from our Florida members who like to buy/swap/sell old gear.

ANNUAL SPRING MEET

Saturday, May 7

AWA Annex & Legion Hall

Rte. 5 & 20

HOLCOMB, NEW YORK

The Association's Annual Local Spring Meet will again feature two large equipment auctions with no minimum – everything goes!

Schedule:

10:30 AM – Auction at Annex

Miscellaneous receivers and speakers that require restoration, miscellaneous equipment, etc. – everything goes!

12 Noon – Buffet Dinner -- all you can eat. $6 including Auction Card

1:30 – General Auction

Receivers, speakers and other equipment including pieces brought in by members. No minimum with direct sales to seller. This auction requires all participants to have Auction Card (*available at door*) for admittance ($1.00) to help defray cost of facilities.

Limited seating capacity – advance dinner reservations advised. Write or telephone:

Lauren Peckham (607) 739-5443
Ormiston Road, Breesport, NY 14816
or
Bruce Kelley (716) 657-7489
Main Street, Holcomb, NY 14469

(*Do NOT send money – write or telephone NOW!*)

SOUTH-EAST REGIONAL CONFERENCE NORTH CAROLINA

Date: March 26 (Saturday)

Location: Journey's End Hotel, Charlotte, N.C.
(Subject to last minute change.)

Open House: Friday 7 to 9:30 PM
at Ted Miller's home in Landis, N.C.

Saturday program:

- Flea Market
- Equipment contest
- Lectures and demonstrations

Members in area and adjoining states will receive "*flyer*" in mail.

For additional information, write:
Ron Lawrence
2334 Westerley Hills Drive
Charlotte, North Carolina 28208
(Telephone: 704-392-4844 after 6 PM) or
Bob Lozier
600 E. Green Street, Monroe, N.C. 28110

NORTHERN NEW JERSEY MEET

Date: April 30 (Saturday)

Location: "The Still"
Sussex Co. Rte. 517, Tranquility, N.J.
Approximately 1½ miles north of Rte. 80, Exit 19 at Allamuchy, New Jersey
(*Same as last year.*)

Members in Northern New Jersey, Eastern Pennsylvania and NYC Metropolitan are invited to this one day AWA meet. Here's the schedule:

9 AM to 4 PM FLEA MARKET

($5 registration for flea market which includes coffee and doughnuts.)

12:30 Noon DINNER

A full course dinner with choice of Roast Beef, Broiled Fish or Turkey. Price only $10.00. (*Refundable if unable to attend.*)

1:30 PM – Short entertaining program and drawing of prizes.

There is a nice motel nearby for those who wish to stay overnight: The Panther Valley Motor Inn. (*Note there will be an informal get-together Friday PM for dinner .... join us!*)

Flyer will be sent to all members in the area with details. Dinner reservations **MUST** be made in **ADVANCE**. Indicate dinner choice and mail $10.00 to:
John Richardt (W2WIY)
94 Bald Eagle
Hackettstown, New Jersey 07840
(Telephone: 201-852-3475)
BEFORE Tuesday, April 15

INDIANA HISTORICAL RADIO SOCIETY and THE ANTIQUE WIRELESS ASSOCIATION REGIONAL SPRING MEET

Date: Friday, April 22 and
Saturday, April 23

New location: The American Plaza
1212 Magnavox Way, Fort Wayne, Ind.
(*located on SR 14 & I-69 at Exit 105-A*)

This is one of the big meets of the year. Plan to attend. Information will be sent to all IHRS and AWA members in the area. For additional information, write to:
John Foell
702 E. Ninth Street, Auburn, Indiana 46706
(Note the new location.)

REPORT ON ANNUAL CONFERENCE

BIG FLEA MARKET-----
..SEE OLD FRIENDS AND MAKE NEW ONES.
TOP SPEAKERS..
A GREAT TIME !
AUCTION - WOW!

Report by Carl Ziegler

"A day in the flea market.."

This year's Conference set an all time record for attendance with final registration nearly 800. This does not include the several hundred who wander into the flea market and never bother to register although they didn't hesitate to use the Sheraton's restrooms or occasionally sneak into some of the lectures. These people are pretty cheap-- just to save five bucks and we know who most of them are!

Attendance was worldwide with members from Austria, Canada, England, France, Germany, Italy, Japan and Switzerland. Museums were well represented with Ray Hutt (Smithsonian),Ernie DeCoste (Canadian Science Museum), Fred Barry (The Foothill Museum) and Bob Merriam (The New England Wireless Museum). Johnny Johnston and Bill Grenfell from the FCC were in attendance while John Huntoon and By Goodman represented the ARRL.

Most historical clubs had at least one member signing in. A few from distant points I ran into were:Floyd Paul (Scars), Dick Brewster (Pittsburgh Club), Ralph Muchow (ARCI), Chevy Crandell and George Potter (VRPS-Texas),Dave Moore and others from Houston club, George Fathauer (Arizona Club), Jack Nelson (Schenectady club), Doug Heimstead (Minnesota club),Ross Smith (IHRS), Larry Rosine (Mid-West club), Ralph Williams (Long Island club),Fred Barry (CHRS), John Drake (ARCA),Joe Koester (MAARC) and several from the northwest

Three old timers enjoy the Conference: Bill Grenfell, W4GF, Dick Jordan, W4UM and George Batterson, W2GB.

whose names I've misplaced.

AWA Regional Representatives were present and plans were made with Bob Lozier (North Carolina), Don Patterson (Georgia), John Richardt (New Jersey) and Felicia Kreuzer (NFWA) for 1988 local meets.

Programming: Three days of programing was more diversified than in the past and well received as evidenced by overcrowded meeting rooms. Bud Hall's Goddard report gave unpublished information on a controversial subject while Rex Matlack told about a forgotten super amateur station: 3ZO. Ozzie, W6AD took us behind the scenes of super power BC stations and Glen Fuller presented a scholarly paper on Alexanderson alternator design. John Nagle's illustrated talk opened a new field for the collector: VHF gear.

Glen Fuller gave a talk on the Alexanderson alternator.

Bruce Roloson gave an in-depth description of Audion tube development. Stu Meyer's talk on mobile radio proved he knew his subject thoroughly (with excellent pictures) while Murray Weller showed us rare and unusual telegraph keys which made us envious. Mel Comer, as usual, didn't let us down with his "Show and Tell" for collectors -- always different and most welcomed.

Our guest speaker, Dr. Rudiger Walz, held member's attention as he described his vacuum tube laboratory and the Loewe tube. The surprise program was one which we were hesitant to present since it wasn't exactly radio -- the Theremin musical demonstration professionally demonstrated by Floyd Engels to an over-flowing audience. It proves members like variety!

Yes, we under estimated the interest in some of the meetings and will no longer schedule programs in the smaller over-crowded rooms. Sorry about that.

Old Equipment Contest: Ralph Williams would like to see more entries. Some members are reluctant to enter feeling their receivers or pieces of equipment are inferior. Awards are based on several conditions other than appearance. You may have a winner, so enter next year.

Flea market problems: The large flea market is one of the Conference's major attractions but can sometimes be a problem to our volunteer committee. The '87 event ran much smoother than in the past by having pre-marked parking areas. The vast majority of participants co-operated by staying within their designated areas and registering promptly. A few however disregarded the rules which

Break between programs: Stu Meyer, W2GHK, Ozzie Jaeger, W6AD and BK.

CONFERENCE HIGHLIGHTS

(Continued from previous page.)

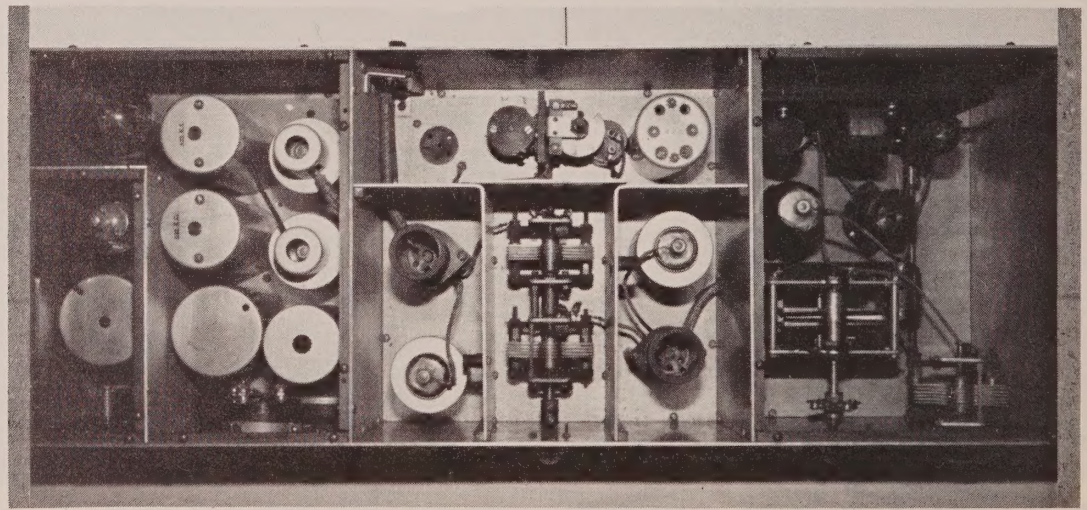
brought several complaints from members. The most flagrant was a dealer (?) who drove in, parked his truck, peddled his goods and made no attempt to register. After a lengthy period of time he was told in no uncertain terms to register or leave. We don't want people like this in our flea market....in fact, we don't want them as members.

The other problem is more serious: mobile homes or trailers staying over night. We've been notified by motel management this cannot be allowed in the future due to a city ordinance (?).When two or more vehicles camp two or more nights, the area becomes a trailer park. There are several KOA and other campgrounds nearby so this should pose no problem. Henceforth, all vehicles must clear the grounds by 10 PM to comply with the Sheraton's request. We have a good relationship with management and don't wish to jeopardize it. (Note: The registration fee pays for use of grounds and flea market attendant. (It is NOT free to AWA.) --C.Z.

Bob Dennison received a Special Award for his miniature "old time home" built in a cathedral cabinet.

The Kreuzers receive "Best of the Show" Award for their Marconi display.

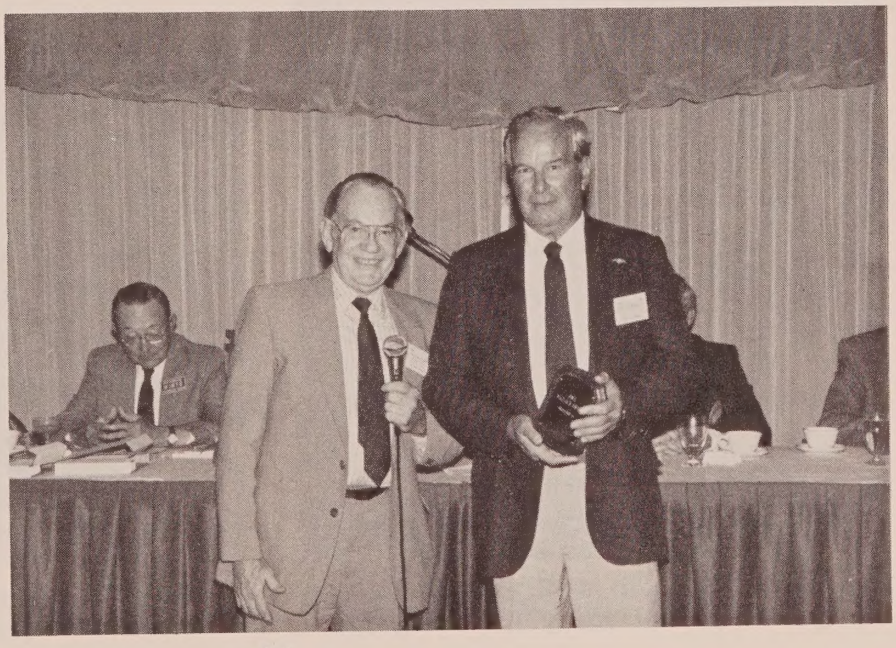
Dick Brewster presents Edmund Taylor the award for television documentation.



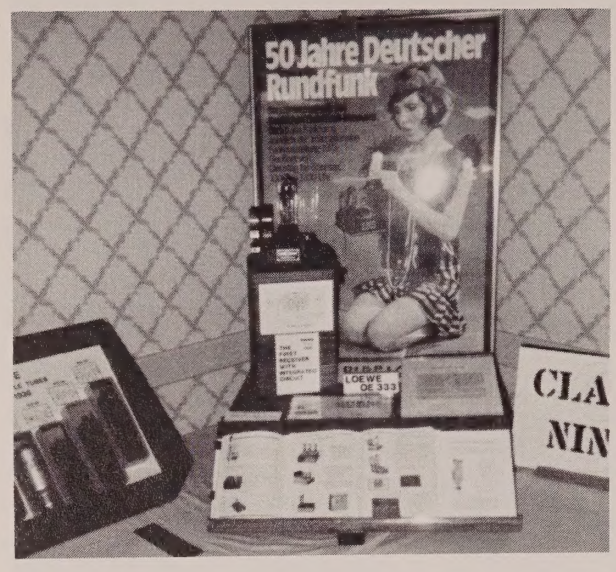
A Special Award was given to Bob Hager for this unusual 1932 homebuilt receiver.

Fran Thisse, W2BJI-J37XC(left) receives the Cundall Memorial Award as top scorer in the 1987 OT CW Contest. Bob Morris, W2LV, a previous winner makes the presentation.

Equipment Contest Chairman Ralph Williams (right) congratulates Dr. Max de Henseler, HB9RS for receiving the 1987 AWA Display Award.
(See next page.)

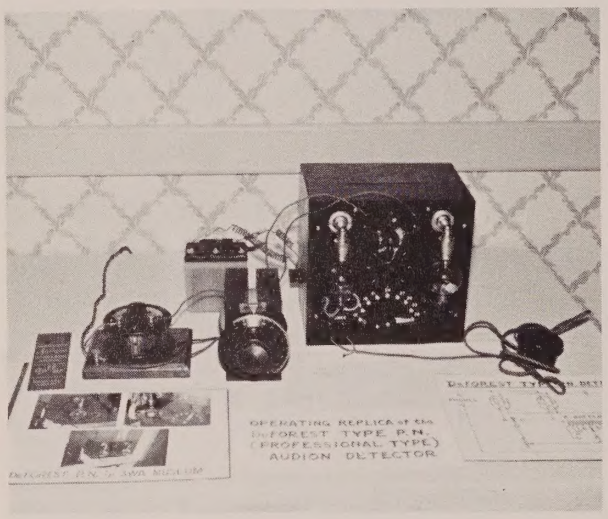


John Rollins (right) holds the plaque for having built an outstanding amateur transmitter. (See picture elsewhere in OTB.)



Max DeHenseler received the Display Award for his Loewe exhibit.

John Nagle receives the Houck Award from Ray Hutt of the Smithsonian.



Replica of Audion Detector made by Ross Smith received a Special Award.

Franz Mock of Austria won 1st place with his Lizenz-Schrack receiver.

Renate DeHenseler admires tube made by guest speaker Rudy Walz (right).

Udo Radtke (DJ5KG) was one of several foreign members present.

OLD GEAR CONTEST

NATIONAL HISTORICAL RADIO CONFERENCE

CLASS 1. PASSIVE DETECTORS

1. Jim and Felicia Kreuzer
   -- Marconi collection
2. Mike Feher
   --Seirt WWI receiver
3. Larry Babcock
   --Receptor Telegraphique
3. John Weisner
   --Radionette

--Special Award--
Bob Dennison - Radionette

CLASS 2. 1 AND 2 TUBE RECEIVERS

1. Franz Mock
   --Lizenz-Schrack German receiver
2. Andre Chompret
   --Microdion (French)
3. Charles Stinger
   --Bruno receiver

--Special Award--
Replica of DeForest PN tuner

CLASS 3. THREE TUBE RECEIVERS

1. Mike Katzdorn
   --Jone 1-tube and amplifier
2. Jerry Finamore
   --Penn Wireless receiver
2. Ross Smith
   --Reinartz receiver with coil

(No third place)

CLASS 4. 4 and 5 TUBE RECEIVERS

1. Ron Frisbie
   --Wireless Equipment Standardized
2. Floyd Bennett
   --Radiola VII
3. Robert Lozier
   --Nora receiver
3. Robert Trauterman
   --Radiola 20 desk w/antenna lamp

CLASS 5. 6 or more TUBE RECEIVERS

1. Walter Asherbraner
   --Federal "61"
2. Chet Weisner
   --General Instu. Corp. receiver
3. Mike Feher
   --Ducret Superhet

--Special Award--
Robert Hager- 1932 Homebuilt superhet

CLASS 6. SPARK EQUIPMENT

1. Mike Feher
   --British Aircraft spark transmitter
2. Lawrence Chestnut
   --Bell rotary quench gap

CLASS 7. VACUUM TUBE TRANSMITTERS

1. Ralph Thorn
   --Pacent/Grebe CTXI
2. John Rollins
   --1932 transmitter: 47-210-211.
3. Allen Breiner
   --Two tube TNT

CLASS 8. TUBES 1905-1918

1. Larry Babcock
   --Spherical Audion

CLASS 9. FOREIGN TUBES BEFORE 1930

1. Max DeHenseler
   --Display of Loewe tubes
2. Franz Mock
   --Display of Telefunken tubes

CLASS 10. TRANSMITTING BEFORE 1940

1. Alan Douglas
   --Marconi and Catkin tubes
2. Lawrence Chestnut
   --1926 DeForest Type "H" tube

THOMPSON AWARD "Best of the Show"

"Marconi Exhibit" Felicia & Jim Kreuzer

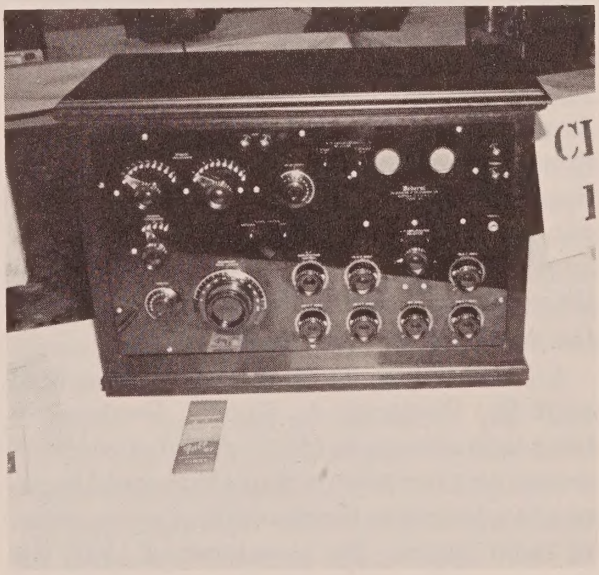
MATLACK TRANSMITTER AWARD

John F. Rollins

ANNUAL AWA DISPLAY AWARD

Max DeHenseler

Chairman: Ralph Williams
Judges: Geoff Bourne, Charles Day, Alan Douglas, John Drake, John Drew, Bill Holly, Orval Parker, Ross Smith
Recorder: Elinor Williams

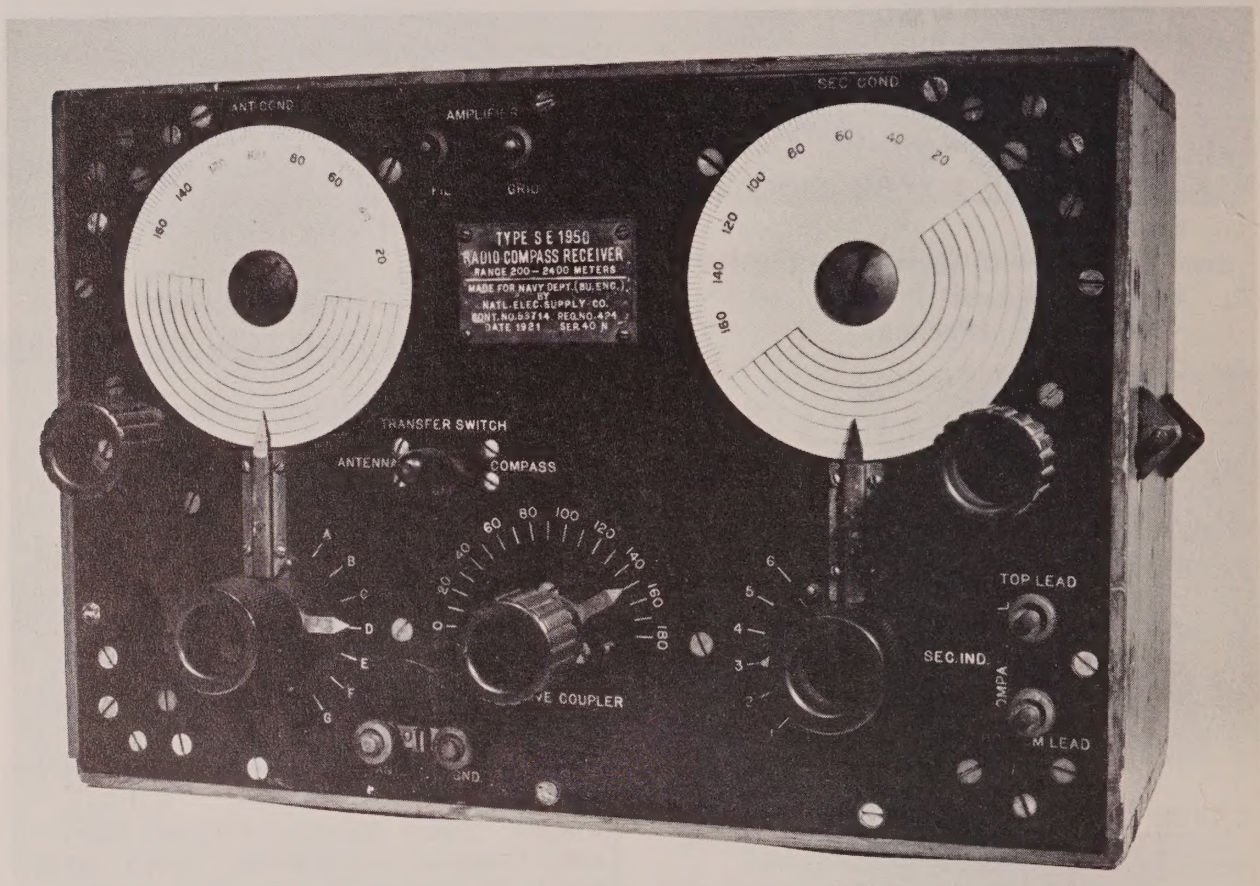


This mint Federal "61" captured First Place in Class 5 category.

IDENTIFICATION and VALUE

Editor: Lauren Peckham
Ormiston Road, Breesport, NY 14816
All correspondence requires SASE for reply

THE SE-1950 RADIO COMPASS RECEIVER



Radio Compass Receivers were of interest to the US Navy as early as 1906 when the Stone Radio & Telegraph Company installed a "*Direction-Indicating Device*" on board the *Lebanon*. However the equipment did not perform as expected because the antenna was fixed, making it necessary to swing the ship to obtain the maximum signal. The absence of an amplifier in those early days made it difficult to determine the exact time the ship swung through the point of maximum intensity.

Little was done in the direction-finding field until Dr. Frederick A. Kolster developed a large loop antenna in 1915. A coil of wire was wound on a rectangular frame that could be rotated to determine the direction of propagation of radio waves. By November of 1916 the Director of Naval Communications decided to locate 12 DF stations along the Atlantic coast for the detection of enemy signals should the US become embroiled in the war. Twenty of Kolster's direction finders were installed on battleships and cruisers in late 1916 with some portions designed by Stuart Ballantine. In late 1917 commanders of destroyers were successful in locating enemy submarines by using the SE 995 receiver.

The SE 1950 Radio Compass Receiver shown in the photograph is typical of early Navy equipment. The controls for tuning and coupling are gear driven with beautifully machined brass components. Both variable capacitors are mounted on cast aluminum frames, and the wave length switches use a cam system with a nice positive action. The engineers at the Washington Navy Yard and The National Electric Supply Company did an excellent job.

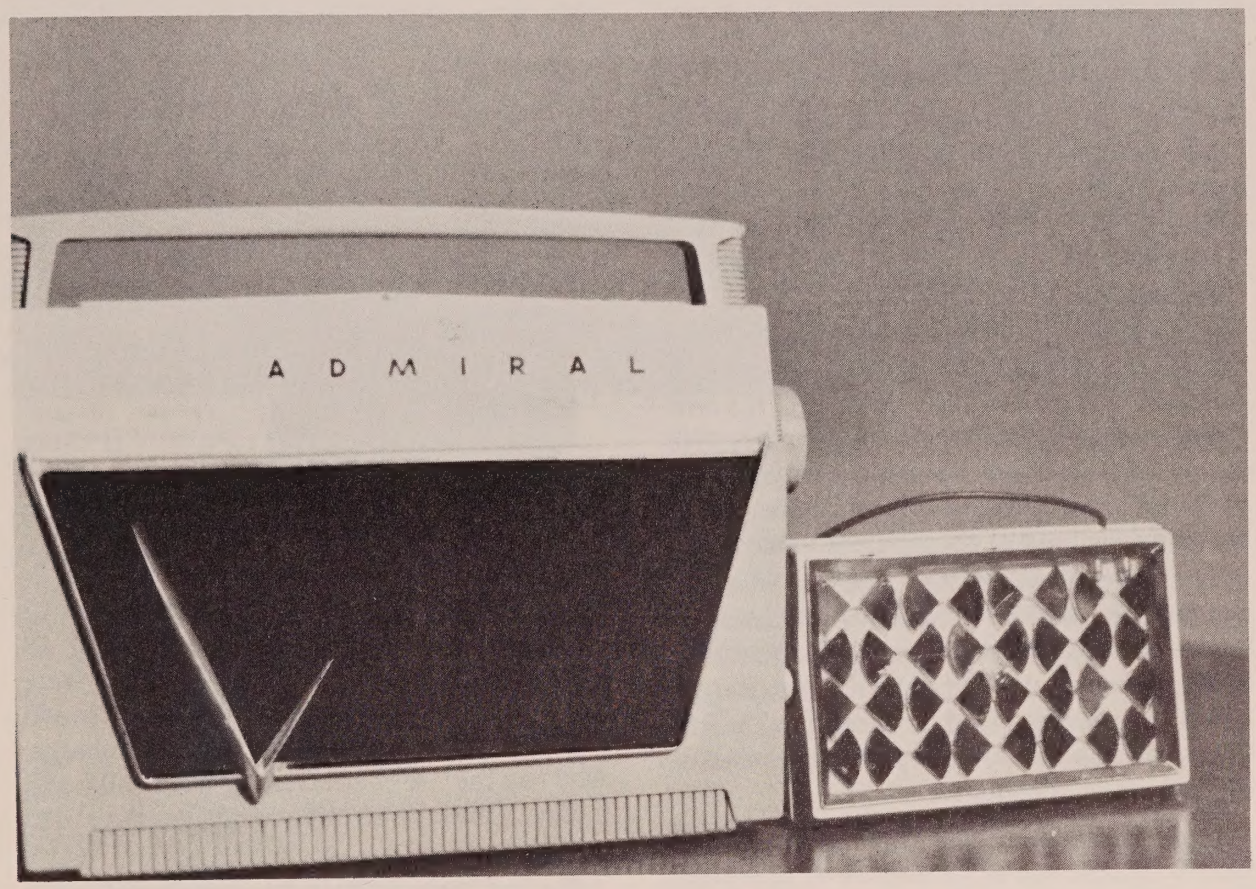
NESCO also produced the SE 950 compass

(Continued on next page)

FROM SUN TO SOUND

First solar power home radio

by Norm Smith, Bradenton, Florida



ADMIRAL RECEIVER WITH SUN POWER PAK

In 1956 the Admiral Corporation produced the world's first solar powered radio for the consumer market.

It is a marvel of two new technologies which were emerging at the same time. Transistor radios were just starting to become commonplace, and silicon solar cell power was being developed, primarily for the new space program.

Admiral engineers appropriately married these two and produced a truly unique radio. The "*Sun Power Pak*" utilized 32 individual quarter sections of silicone solar cells to produce 9 volts at 15 milliamperes. The solar cells are encased in a block of clear plastic with silicon oil center. The block is 6 inches long, 4 inches wide and ½ inch thick and provides good focusing of solar energy and excellent shock absorption. The Sun Pak is efficient enough to operate the radio when exposed to light from a 150 watt lamp.

When connected to the radio, the "*Sun Power Pak*" provides all the energy needed to operate the radio and a 2,000 UF capacitor in the Pak helps with variations in output caused by temporary blocking of sun input.

The radio is a conventional 6 transistor super-het and it may also be operated on conventional battery power by use of 6 D cells.

(The SE-1950 RECEIVER cont.)

receiver for use on Naval aircraft. It employs the same tuner as the SE 1950 but includes a detector and two audio amplifier stages. CW 933 tubes made by Western Electric were used and are identical with type VT-1.

Although the SE 1950 may not be as desirable as other NESCO relatives like the CN-239 or CN-113A, I think it makes a fine addition to a display of commercial equipment. Value: a figure in the neighborhood of $700.00 would be fair, as compass receivers rarely appear on the market.

COLLECTING EARLY RADIO BATTERIES

by Bob Allen, Rochester, NY

My collection of radio batteries started several years ago with a two small "C" batteries from an old radio bought at a junkshop near my hometown of Binghamton. I now have over 30 different sizes and makes, many of which also came from old sets.

All early radios (other than crystal sets) used batteries for the A, B and C voltages, excluding of course, those that were powered by A & B eliminators. There were three types of batteries:

1. The **"A" battery** to light the filament. It was usually a low voltage re-chargeable storage battery resembling a common car battery and consisted of three cells (*2 volts each*). It's now almost impossible to find a storage battery with outside connections. These early batteries have long since been discarded since they were heavy, messy and of no apparent value.

The other type of **"A"** battery was the common 1½ volt No. 6 dry cell. It was ideal for low current tubes such as the WD-11 and 199. Being a primary cell, it could not be re-charged like the storage battery. I have had good luck in finding these batteries. They were also used in old-fashioned telephones.

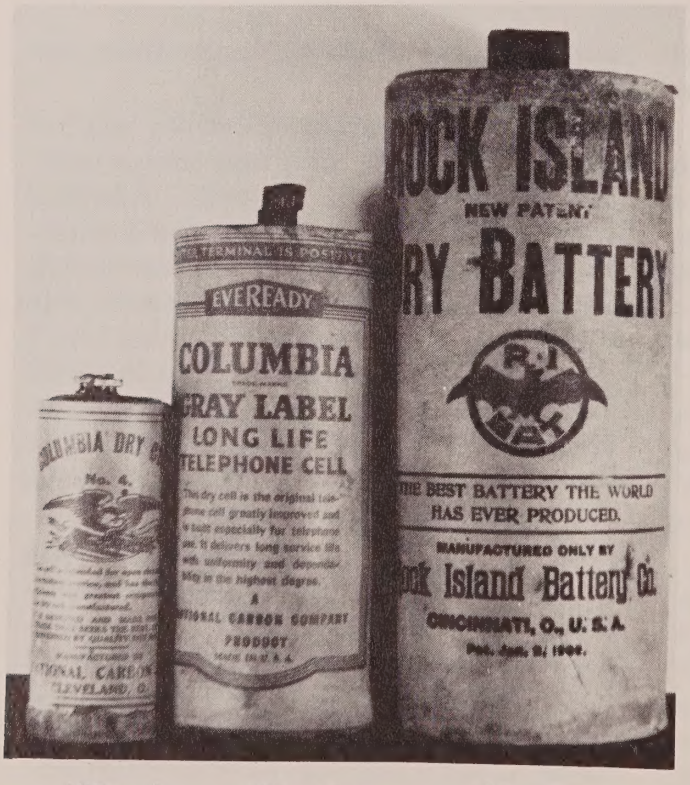
2. The next collectible is the common **"B" battery** consisting of many small 1½ volt primary cells (*such as the common flashlight battery*) in series. The little batteries were packaged in a block (*see illustration*) and available in two sizes: 22½ and 45 volts with intermediate taps. They were also available in medium and heavy duty grades.

Since most battery sets required a higher voltage, it was necessary to place several in series to obtain 90 or 135 volts or even 180 volts. Typical manufacturers were Eveready, Burgess and Ray-O-Vac.

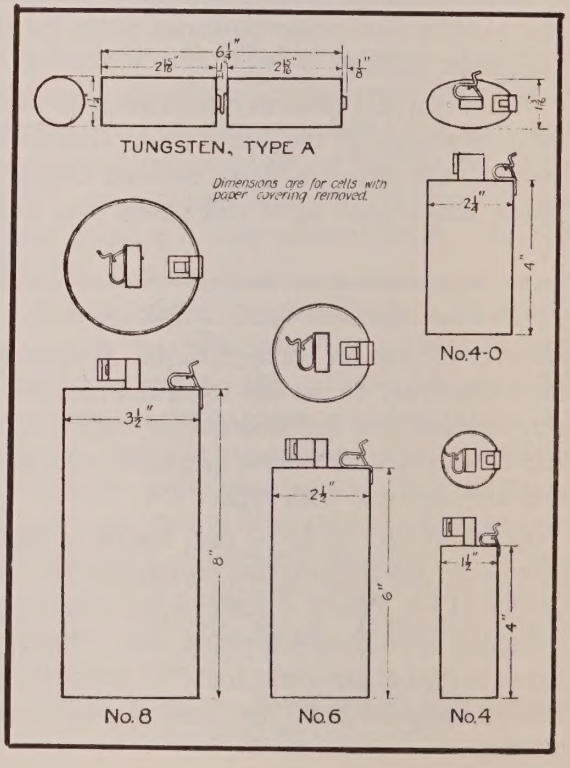
45-Volt Type
Variable voltages (in steps of ½ volts) —from 16½ to 45 volts may be had.

Another type of **"B"** battery consisted of 2-volt secondary cells (*in glass jars*) usually 12 or 24 connected in series providing 24 or 48 volts (*see illustration*). These batteries were efficient except one occasionally had to add solution and place them on a trickle charge. And like the **"A"** battery, they were bulky and messy. I have a 48 volt set but have never tried to charge it.

3. And lastly, there were the small **"C" batteries** (*for the bias supply*) which resembled



NO. 4 NO. 6 NO. 8



small **"B"** batteries with voltages ranging only 4½ to 22½ volts. Since they drew little current, they were long-lasting and were frequently placed within the radio cabinet for convenience. That is how I happened to find several that had been hidden for over 50 years.

Summary of use of radio batteries:

"A" – supplies the power to light the filaments. It is low voltage and high current.

"B" – supplies the high voltage for the plate.

"C"– is the bias voltage for the grid circuit.

OTHER BATTERIES

In addition to the radio types, there are many kinds of batteries one can collect, ranging from miniature (*as used in hearing aids*), long lasting lithium to huge units used in power stations. However, I advise one to stick to batteries of the past. A challenge, for an example, would be a set of dry cells: No. 4 through 8. Pictured are #4, 6 and 8. I have never seen a 5 or 7. The number indicates the height of the battery: #6 is 6 inches high, etc.

The No. 4 was made in two shapes: round and oval. The pre-WWI battery can frequently be identified since it has the center carbon element projecting above the surrounding surface. I believe the number (*and size designation*) for dry cells was established around 1900.

The original dry cell was developed by Leclanche in 1868. It did not become a true dry cell (*non-spillable*) until about 1888. All early cells, whether primary or secondary, were in glass jars and there were many types with forgotten names such as: Grove, Bunsen, Plante, Daniell, etc. Each served a purpose.

RED SEAL DRY BATTERY

QUALITY GUARANTEED

These batteries are guaranteed to give as good satisfaction for IGNITION OR OTHER WORK as any dry battery made.

The dealer is authorized to make good this guarantee. Comparative tests invited in any manner suggested by competitors.

Size **A** in Round or Square Cases, as preferred.

Amperage, over 20. Voltage, over 1.50

THREE SIZES. A 2½x6¾——**B** 3x7½——**C** 3¼x8½

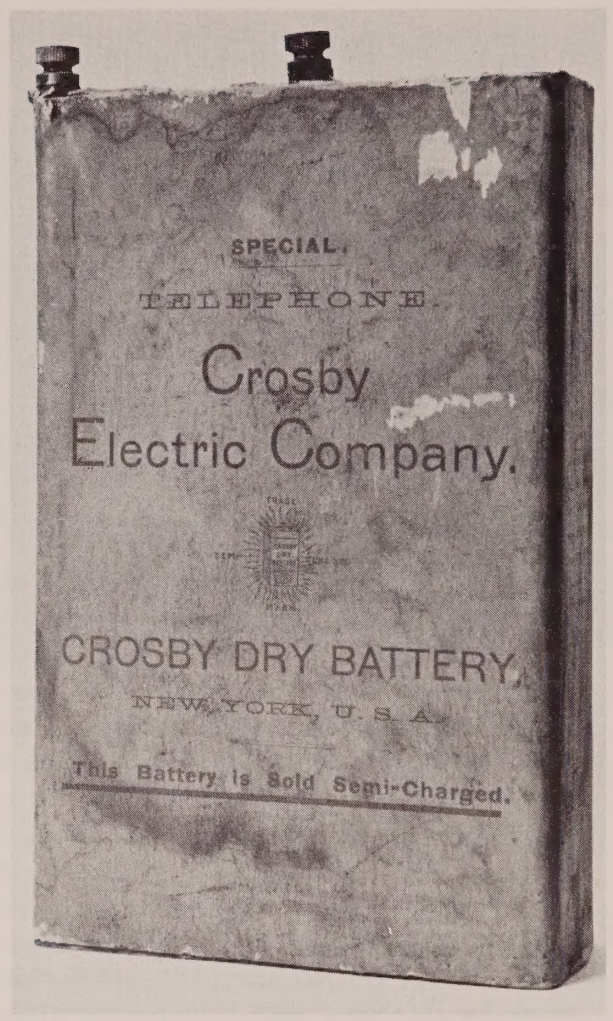
You can pay more for other batteries, but the quality will not be better.

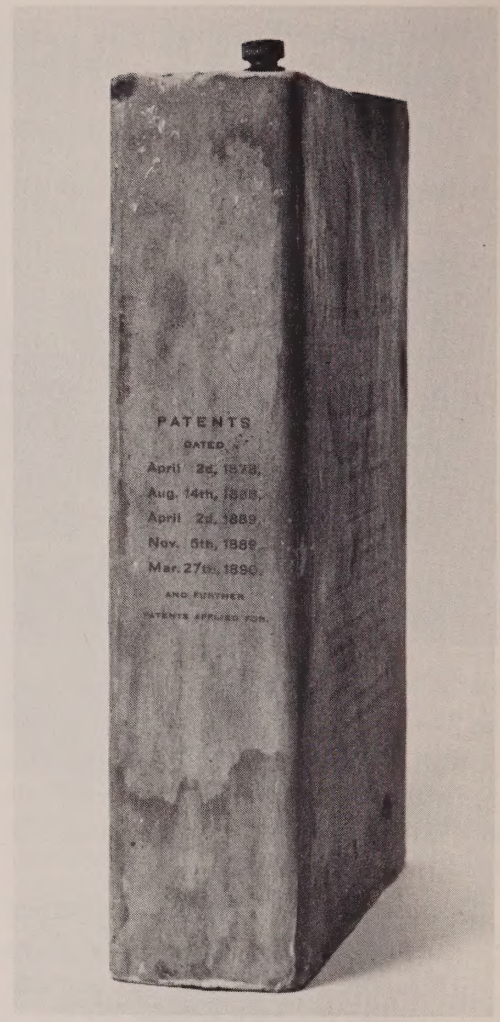
MANHATTAN ELECTRICAL SUPPLY CO.

NEW YORK 17 Park Place — FACTORIES Jersey City and Ravenna, Ohio. — CHICAGO 188 Fifth Ave.

Early Mesco No. 6 dry cell

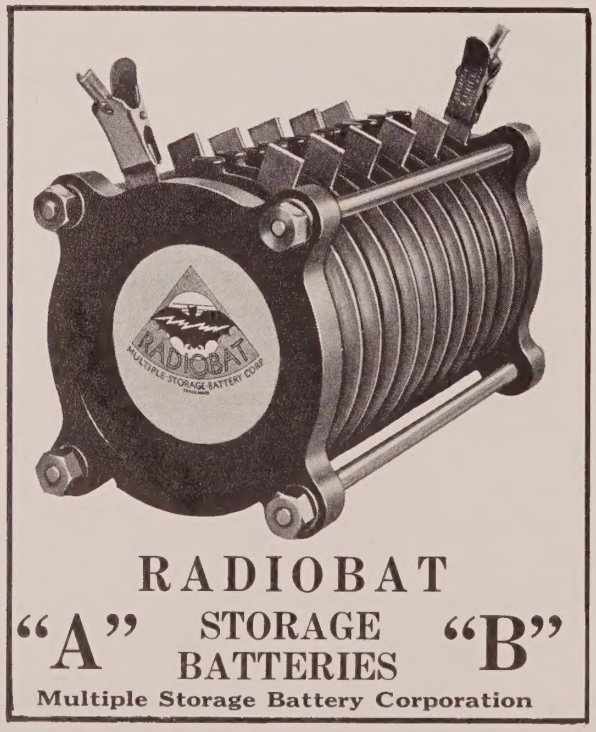
[Continued on next page]





An unusual telephone "dry" battery which requires water.

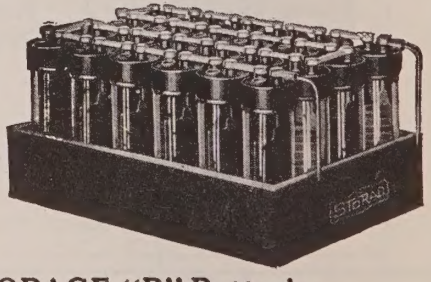
Many old time telegraphers can remember the racks of glass cells in a telegraph office. Did you ever hear of a crowfoot?



An unusual "B" battery

There were also many odd dry cells which I am not familiar with such as the chloride cell in the AWA Museum (*see illustration*). I think the strangest is one owned by Luther Schubert. As seen in the picture, it has patent dates of 1878 and 1890. Luther tells me a voltmeter still gives a reading of 1.35 volts! He is not sure of its composition.

Another battery I found at the AWA Museum was a Weston Standard Cell. It is glass, dumbbell in appearance and supposedly gives an accurate reading at all times. I wish to thank Warren Green, Luther Schubert and Bruce Kelley for the information and Al Crum for the pictures.



STORAGE "B" Batteries

THE HAYNES DX RECEIVER

by Serge Krauss, Elkhart, Indiana

While attending the 1946 New York City IRE Convention, I negotiated some subcontract work with The Amplifier Corporation of America. My initial contact was with Mr. A. C. Shaney, the chief engineer, who seemed reluctant to have me meet with the manager. At my insistance, I was finally taken to an isolated office and introduced to an apprehensive, sad appearing Mr. A. J. Haynes.

It was immediately apparent that he had a severe speech handicap. Fortunately, I had worked with a similarly handicapped associate and I was able to carry on a fluent conversation with Mr. Haynes. A contract proposal was quickly roughed out and a relaxed smiling Mr. Haynes related some of his early experiences in the radio field.

I complimented Mr. Haynes on the performance of a Haynes-Griffin kit superhetrodyne I had as a boy and asked about its success. He said they sold well but there were two limiting factors: the higher cost and the higher skill required to build them. Many of the more affluent prospects did not have the knowledge or the time to assemble the kits, and the patent situation did not allow his organization to market a functioning superhetrodyne receiver.

To promote the kit sale he said he recruited several "*cracker jack radio experts*" in a separate loft activity. He sold the kit and then sold a certificate (under the counter) good for assembling and testing it at the clandestine loft.

In Mr. Haynes reminiscences it was obvious his favorite development was the "*Haynes DX Receiver*". Compared to the then popular series resonant single circuit regenerator using the same two components (variocoupler and variable condenser), he claimed his circuit to be more sensitive, sharper tuning, with variable selectivity and accurate station logging. He was proud of having received unsolicited testimonials for it from around the world.

The *Popular Radio* magazine September, 1923, issue has an article titled "*How To Build The Haynes DX Receiver*" with a photograph of Haynes as the author but written by Lawrence M. Cockaday. A full page advertisement in the same issue is for Haynes-Griffin Radio Service Inc., "*New York's Largest Radio Store*", 41 West 43rd Street, New York City, shows and lists parts for his simple one tube receiver with the slogan "*1000 Miles For $15.00*". I have a brass base 201-a tube with a large sticker of Haynes-Griffin Radio Service Inc., Chicago/New York.

Subsequent *Popular Radio* magazine carried articles by Cockaday on how to build Haynes's superhetrodyne set – then the articles stopped. Haynes intimated that rivalry may have been the reason for a cooling off. He said a comparison test of his simple one tube DX receiver against the much more complicated Cockaday Four-Circuit Tuner was a stand off on sensitivity which may have irked Cockaday.

Haynes-Griffin

HAYNES SELECTOR
TRADE-MARK

"A New and Perfected Wave Trap"

Designed by A. J. Haynes, Originator of the Haynes Circuit

Copy from *POPULAR RADIO* magazine

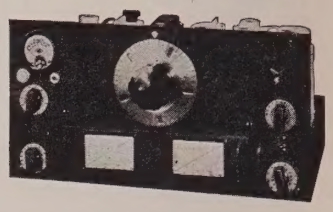
An analysis of the Haynes DX Receiver circuit appears to support Haynes's claim of superiority over the more common single circuit regenerator that resonated the antenna and trapped varicoupler with a variable condenser. His configuration allows optimum transfer of the antenna signal to the parallel resonant variocoupler for the best sensitivity, selective loading of the tuned circuit varies the selectivity, and a fixed circuit inductor gives consistant station logging.

After visiting Mr. Haynes operation, subsequent telephone conversations with Mr. Shaney frequently ended with being switched to Haynes for friendly chats on early radio. It seemed to me that he cherished our conversations wherein he was able to talk fluently despite his speech handicap. In retrospect, I hope that I may have added a little happiness to handicapped old timer in radio.

Mr. Haynes reminded me that his early rivals were called "*Radio Experts*", and we laughed about the old definition "*An expert is any damn fool a hundred miles from home*". He asked if I were an IRE member and when I acknowledged my associate membership, he modestly boasted he was also, and that made the difference between an expert and an engineer.

The COMMUNICATION RECEIVER

Editor: Bill Fizette, K3ZJW
R.D. 1, Box 55, Henryville, Pennsylvania 18332
All correspondence requires SASE for reply



THE NATIONAL SLIDING COIL TRAY RECEIVERS

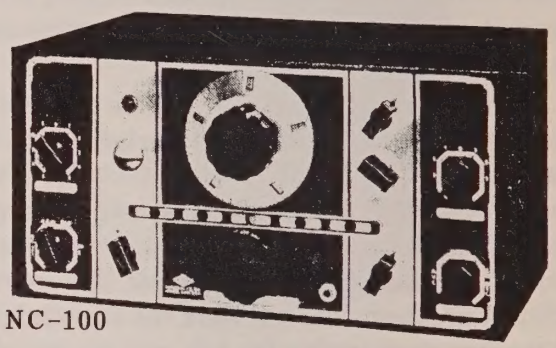
INTRODUCTION

October, 1935: The National Company under the engineering direction of Jim Millen has had the HRO communications receiver on the market for ten months, and it is already a resounding success, with wide acceptance by various government and professional interests and the more affluent amateur circles. However, Millen is fully aware of the market and design factors which significantly influence sales, and he sets out to design a different receiver for a different market, a receiver which will be not only lower in price than the HRO, but will also appeal to the mass market for a quality short-wave-listener communications type receiver. His answer is the NC-100, first announced in Catalog 250 and referred to in QST for October, 1935.

No survey of the communications receivers of the 1930's would be complete without a review of these "sliding-coil receivers" conceived by Millen's engineering group. The predominant design feature of the new receiver was the sliding coil catacomb, a massive aluminum casting with a separate compartment for each of the 15 RF coils. This mechanical design was so successful that the National Company built a long series of receivers around it, continuing into the 1950's. This column reviews some of the details surrounding this unique and historically significant innovation.

The world, and especially the great American consuming public, was awakening to the wonders of radio and especially to the new experience of international short wave. Unfortunately, the Great Depression was still heavy on the pocketbooks of the purchasers, and the price of the HRO, $200 with coils, speaker, and power supply, was simply too much for most people. Then too, the HRO appeared needlessly complex with separate coil sets and power supply; furthermore, it did not tune the broadcast band without buying two special coils, and for the music listener the audio quality left much to be desired.

Millen was aware of this opposition to some of the design features of the HRO, but he was adamant that plug-in coils were state-of-the art technology. At the same time he was cognizant of the emerging interest of the general public in short wave and the trends in the radio industry to turn out lower-priced consumer products with some short wave bands and booming push-pull audio circuits. The NC-100, a hybrid short-wave/communications/BC band receiver, neatly answered the problems.



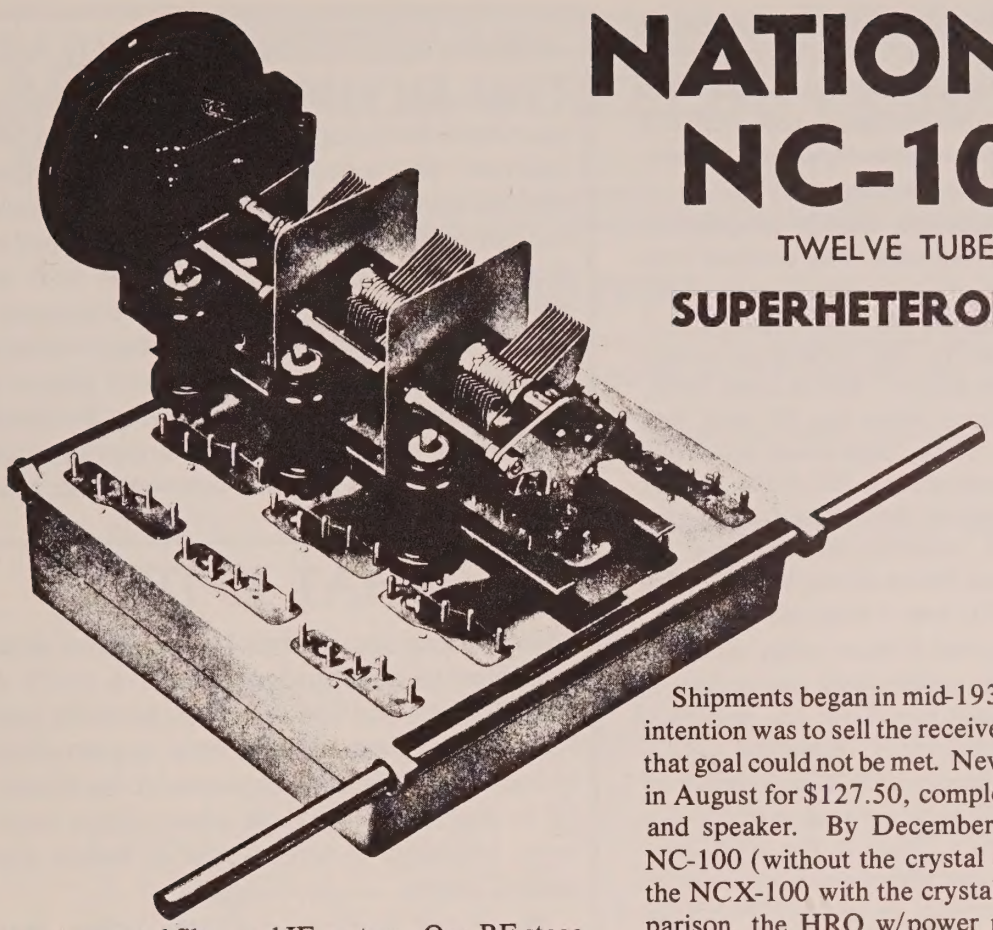
NC-100

Being mechanical engineers first and foremost, the National design group produced another mechanical wonder. The coil catacomb moved back and forth across the bottom of the chassis on a ½" polished steel rod, actuated by a knob on the front panel through a rack and pinion arrangement, bringing each of the coil sets in turn into positive contact with phosphor-bronze fingers protruding down from the bottom of the tuning capacitor. There were no long leads or filmsy switches, and each coil remained shielded, with no troublesome interactions or dead spots resulting from idle coils. As each set of coils was moved into position, they would snap into place with a positive detent action, insuring that they could return to the same position each time. This feature contributed measurably to calibration accuracy. To prevent unnecessary noise and crashes during band changing, the coil tray slid on fiber rings, the pinion gear was insulated from the chassis, and the screen voltage was removed by an automatic switch in the oscillator coil.

Once the band-switching mechanism was a reality, the rest of the receiver followed a logical design sequence, with much of the technology borrowed from the HRO. The 500-division PW dial with its twelve-foot effective scale length was retained, as

NATIONAL NC-100

TWELVE TUBE SUPERHETERODYNE



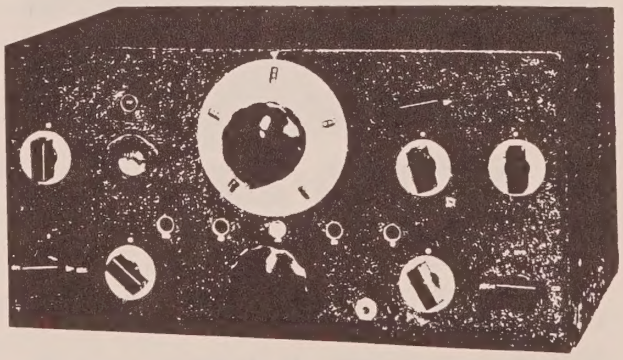
was the crystal filter and IF system. One RF stage was deemed adequate, and the capacitor gang and the 20:1 ratio gear box were modified to a three section in-line version. Coils were of the well-known R-39 material, with construction similar to those of the HRO, with the exception that pins were used instead of button contacts. The new metal tubes were used in all circuits except the power supply and the tuning indicator.

The push-pull audio circuit produced a very respectable 10 watts, with the audio response shaped by the tone control and a ten-inch separate speaker mounted in a metal-clad wood cabinet. Millen, who considered that all serious communications receivers should have external power supplies, rationalized the use of the built-in power supply on the basis of the audio power requirements. Otherwise he said very little about it, and the purchasers didn't really seem to care.

The front panel was a thin aluminum plate finished in contrasting red, white, and black enamel, a departure from the severely conservative black crackle finish then in vogue for communications gear. The eye tube, a 6E5, acted as a tuning indicator and, other then being a popular sales gimmick, contributed very little. Without the speaker the receiver weighed 50 pounds, and it was obviously a quality piece of gear. Of equal importance, it tuned the complete spectrum from 540 kc to 30 mc, not just some of the short wave bands. Advertising emphasized the neatness of the layout and the accessibility for repairs.

Shipments began in mid-1936; while the original intention was to sell the receiver for less than $100, that goal could not be met. Newark Electric listed it in August for $127.50, complete with crystal filter and speaker. By December, Newark listed the NC-100 (without the crystal filter) for $118, and the NCX-100 with the crystal for $141. By comparison, the HRO w/power pack was $168, the RME-69 was $135, and the Hammarlund Super Pro a whopping $241.

Whether the NC-100 as originally conceived was a market success is unknown, but it was a simple matter to convert it to the amateur version, the NC-101X; the only change required was in the tuning condenser plates, easy for the National Company. The five amateur bands, 160-10 meters, were now readily available in a quality communications receiver, complete with speaker and crystal filter, for $125.00. Each band was spread over 80 per cent of the twelve-foot tuning range, and the calibration was advertised as "*permanent*".



NATIONAL NC-101X

(Continued on next page.)

The family began to grow with the announcement of a battery version of the NC-101X in May, 1937. In September, National announced the NC-80X and 81X, economy receivers (general coverage and amateur versions) with no preselector and two sets of coils in each band in a sliding coil tray.

The commercial interests quickly adapted the basic design to their own uses. One contract from the U.S. Department of Commerce, Bureau of Air Commerce, in November, 1937, led to the RCE, a receiver similar to the NC-100 without the crystal filter but with a noise limiter. And in June, 1938, the inevitable occurred when the PC dial was changed to a direct reading high-speed dial. The new models were designated the NC-100A and the NC-100-XA, and became the standard designs for many thousands of receivers manufactured by National for the armed forces during WW II. The U.S. Navy, especially, was a large customer.

Various other versions of these utility receivers were made for special applications; one worthy of mention was a unique model for the merchant marine. The National 156-1 resembled a NC-100A, with the addition of a shielded preselector on the back, with a single coil catacomb riding on the usual polished rod and linked to the main band switch. (The preselector was required to minimize radiation from the receiver, by means of which the Axis subs were able to locate the Allied ships.) Other listed versions included the NC-100ASD and the NC-100-AX (which may or may not be the same as the XA). Many of these hit the surplus markets after the war and became the basis of new amateur stations.

NC 100-XA

In September, 1940, the NC-240 was announced. This was a 12-tube, 10-band receiver of the NC-100 mechanical design but with all the latest circuit refinements. In December it was officially designated the "*Silver Anniversary Receiver*", complete with a special NC Silver Anniversary emblem on the top, an attempt to capitalize on the convenient coincidence of the 25 years of both ARRL and National. With the intervention of the war, all design work was more-or-less frozen and National concentrated on defense production. In 1946, the NC-200 was revived as the NC-240, which was soon followed by the -C, the -CS, and the -D models. The coil tray on the 200 and 240 receivers included 18 compartments, with six basic bands and four amateur bands, the latter switched in by capacitor changes.

The writer has a certain fondness for the NC-101X, as it was the first manufactured ham receiver purchased, second-hand of course, in Columbus, Ohio, in 1955. (The call W8VP was scratched into the coil tray.) After many changes, it has now been restored to its original condition. Restoration, incidentally, requires somewhat more mechanical skill that does the HRO. And if you do one, be sure that you have the correct circuit. A future column will describe the procedure in detail.

Credit must be given to Millen and his engineers for the sliding-coil-tray concept and their design of a practical means of making it work. While National had many other receivers over the years, it is probably safe to say that in sheer numbers of units manufactured, the HRO and the various sliding-coil-tray receivers led the list.

– K3ZJW

AWA AUCTION IS POPULAR

Reportedly, there were at least 8 portable tape recorders in operation at the recent AWA Auction. The recorded information (auction results) appears to be of great interest since the same recorded information was printed in three national collector papers as well as several regional club newsletters. Fortunately, the various editors warned their readers that the sale prices were to be used only as a guide – meaning some were low (few bidders) while other dollar values were unusually high (strong desire to acquire between two bidders).

WHAT IS IT?

While sorting some tubes I came across what appeared to be a modern UX-201-A or 171-A (*circa* 1934-38) but was surprised to find it had 5 prongs (UY *base*). The internal construction including the filament appeared to be identical to the 201-A. A closer examination, however, revealed a screen-grid – hence the added prong.

The tube had no markings other than "*Philco*" on the base. Some time ago I read about this screen-grid tube which did not have the grid connection at top (such as the UX-222), but I have misplaced the information. Can someone bring me up to date?

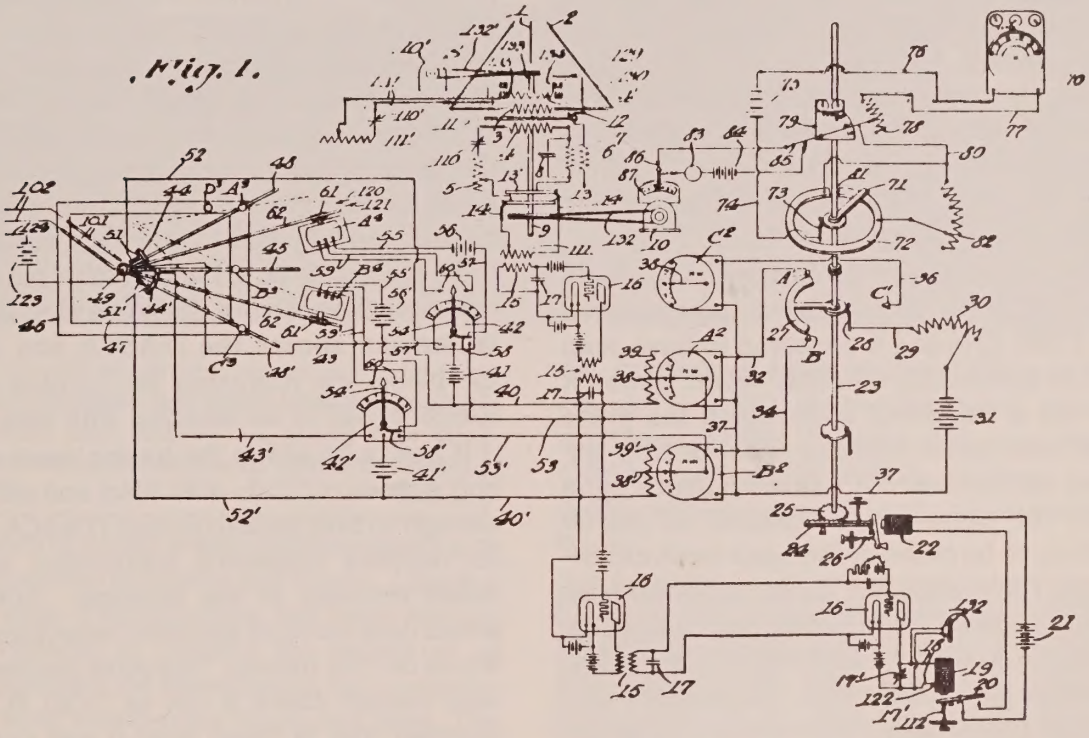
---- BK

RADIO PUZZLE

I like to puzzle over unusual circuits. Here's one that has me guessing – can you determine exactly how this mechanism works? The brief patent description is the only clue. Have fun.

by James R. Hicks, Boulder, Colorado

1,494,770—Walter W. Conners, filed June 12, 1919, issued May 20, 1924.



NUMBER 1,494,770—Method and Apparatus for Indicating the Geographical Location or Movement of Bodies

METHOD AND APPARATUS FOR INDICATING THE GEOGRAPHICAL LOCATION OR MOVEMENT OF BODIES by indicating in similitude or in intelligible signals the location of a moving body. The moving body carries a radio receiving station for the reception of signals from fixed wave-transmitting stations. The receiving station on the moving body is equipped with an indicating member which is controlled by received signals for indicating in similitude the signals received from the fixed stations. In this manner the course of the moving body is automatically plotted in accordance with the movement of the body with relation to the fixed stations.

TELECOMMUNICATION

Editor: Don de Neuf, WA1SPM

AMELIA EARHART MYSTERY SOLVED?

The mystery of what happened to the famous flier Amelia Earhart on her 1937 around the world flight has intrigued many people, and much has been written as to the possible reasons for her disappearance along with her expert navigator Fred Noonan. Guesses run all the way from "*running out of gas and ditching in the ocean*" to capture by the Japanese for various reasons.

Captain Al Gray (W1KA), ex-PanAm is well qualified to carry on some research since he sat in on the original conferences held between Amelia and PanAm executives concerning the important matter of communication and radio direction finding, before she started her flight. Al has run across something extremely interesting and may have the answer. His findings follow:

Various records of the last leg of the flight show one of the frequencies being employed was 7500 KHz and it appeared to have been used in connection with RDF work. I knew it was not a frequency upon which the plane could take good bearings with its loop antenna, so I assumed it was a frequency upon which the plane would transmit to permit bearings to be taken by the hush-hush experimental Navy direction finder supposedly at Howland Island. Then I got a chance to study the ITASCA (Coast Guard vessel assigned to assist the flight) radio logs. I discovered that ITASCA periodically sent homing signals on 7500 KHz and that at least once the plane acknowledged receiving them and tried (unsuccessfully) to take a bearing on the ship using that frequency.

It did not make a bit of sense, but in digging deeper I found that Earhart in a message to the C. O. of the ITASCA had specified 7500 KHz as the homing frequency to be used at the Howland end of the flight. Later I came across a record of an interview given by one of Earhart's advisors in which he said that he had pointed out to Earhart the short-comings of celestial navigation on that path and had emphasized the imperative need for having a *low frequency* homing beacon at Howland in order to make landfall as quickly as possible. When then, after being told that a low-frequency radio beacon at Howland was vital to the success of her flight, did Earhart specify 7500 KHz as the homing beacon frequency and expect (as she obviously did) to be able to home in on it with her loop DF?

Consider these things: Earhart was down in British/Australian territory when she made final arrangements for the Lae-Howland flight. While she was on the ground all messages to and from her would have had to pass over radio circuits which were mainly manual radiotelegraph. Assignment of a homing frequency for use at Howland had to be arranged for her by someone. Perhaps it was done by the Australians and they notified her by message as to what frequency had been assigned. At that time Britain and the territories were still using wavelength and meters rather than frequency and kilocycles, hence the notification of assignment sent Earhart may have been drafted in those terms. Because of equipment limitations aboard the ITASCA and aboard the plane, the frequency for homing use at Howland had to be selected with care.

It had to be within the tuning range of Earhart's receiver (200 - 400 KHz) and still close enough to 500 KHz to permit ITASCA to use its distress frequency transmitter without major retuning of the antenna. 400 KHz would have been an excellent selection. This would be 750 meters. Suppose the message sent Earhart called it out as "750 M". Remember that in those days it was common practice to send a long dash for a zero, so "750 M" may well have been sent in Morse as --... ..... — -- A burst of static could easily blur the "M" and cause this to be transmitted as "7500" which an American reading it would assume to be 7500 KHz. One would think that either Earhart or Noonan would have realized that 7500 KHz is not a low frequency – however they were not skilled radio persons and perhaps to them a frequency was just a number on the dial. All this may be far-fetched, but wouldn't it be ironic if the basic cause for the failure of the flight and the loss of Earhart and Noonan and the aircraft was due to a simple telegraphic error!

Al says his findings were possible through researcher Don Wade who supplied him with radio logs from the ITASCA.

ALAN DOUGLAS: RADIO HISTORIAN

Alan Douglas is a most knowledgeable historian and author. I asked him the source of his information. This is his reply.
Editor

My idea of a cozy working environment is to be surrounded by radios and books. I live in a rather large 1890s house, but there was no room capable of carrying the weight of all these volumes, so several years ago I added a library wing between the house and barn. The photo shows about a third of it. Of course, as junk expands to fill the space available, the house is still full!

I like to research and write articles on radio and electrical history, but since the nearest large public library is 70+ miles away, and the nearest radio library even farther, if I didn't have my own sources, not much would ever get done. Luckily, when I began collecting radio magazines, they were not nearly as expensive as they are now (though just as hard to find). And the electrical magazines mostly came from commercial periodical dealers who have more down-to-earth ideas of value than collectors do.

What's here? The usual radio magazines, and some obscure ones, newspaper radio sections, anything but fan magazines. Electrical magazines back to the 1880s in this country and even farther for British, French, and German titles. Indexes of all sorts, Patent Office Gazettes (after 1925), catalogs, advertising, service manuals, and (almost forgot) books.

I enjoy a good chase and, time permitting, will research all sorts of unlikely requests from friends (recent example: what was the first use of double headphones in radio reception?) or will make copies of most anything, on the theory that in any exchange of information, both parties come out ahead. Anyone have easy access to a set of New York Times microfilm, annual indexes, and personal name indexes? My address (please don't phone): Box 225, Pocasset MA 02559.

HISTORICAL ARTIFACTS

OLD TIME ADS are FREE to members interested in collecting and restoring early radio equipment for personal use.

RULES FOR ADS:

1. Only ONE per issue per member. Send SASE for acknowledgement.
2. Material must be over 25 years old and related to electronic communication.
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Ads received after the above dates will be discarded. Mail ALL ads to:

RICHARD RANSLEY
17 SHERIDAN ST.,AUBURN,NY 13021

(Do NOT send ads to Headquarters.)

WANTED

--schematic for Delco television Model TV 71A. Also WWII vehicular radio sets or components of same. Bill Kish, 800 W. End Ave., New York, NY 10025 Tel. (212) 666-8857

--white porcelain rheostat (3½" dia) for DeForest gear. Trade hard to find tubes or cash. Ross Smith, 1133 Strong Ave., Elkhart, IN 46514

--meter for Heath VOM Model MM1 as replacement. Cliff Daykin, W2AFE, 19 Oxford Place, Geneva, NY 14456

--schematic, alignment info, manual for National NC2-40D receiver. Copy OK. Jack R. Bowers, RR2 Box 212, Highland, IL 62249

--information on WWII Nazi radio Siemens Model K32 GWB using DCH11,DF 11, DAF11, DL 11 and UY 11 tubes. George B. Clemans 851 West Wooster St.,Bowling Green, OH 43402 Tel. (419) 352-7198

WANTED

--several good 75th tubes,HRO-50/60 coils or parts recvr w/coils,Hallicrafters S-35 Panoramic Recvr,National 7" tv. Sam Thompson,W6HDU, 1031 San Antionio Ave., Alameda, CA 94501 Tel. (415) 521-1429

--Radiola I and Radiola 16.Must be complete and in good shape. Will consider receiver that is not working. Andy McKenzie, Box 1872, Medley, Alberta, Canada T0A 2M0

--Hallicrafters Model SX-7 in any condition.Has aluminum finished panel and aeroplane type dial.Also Model SX-9 with German Silver Dial. David Medley, KI6QE, 1450 Bayview Heights Drive, Los Osos, CA 93402

--Pilot 3" tv in restorable condition, good crt and cabinet, all knobs. Charles T. Mooney, 12309 Stafford Lane, Bowie, MD 20715

--need any information to build replica of 1924 Cleartone cartridge type r.f. transformer. Also want Magnavox Type A tube with brass base for display and copy of instructions for Magnavox type TRF-50 and Federal type 102 sets. Robert Lozier, 600 E. Green St., Monroe,NC 28110 Tel. (704) 283-2638

--hard rubber panel at least 10"x11"x¼" and also 215 (VT-5) peanut tubes dead or alive. Gordon Wilson, 11108-50 Ave., Edmonton. Alberta, Canada, T6H OH9

--researcher seeks photocopies of pre-WWI Clapp-Eastham catalogues, plus QST "Operating Dept", Ontario Division, Jan-June, 1921,Jan.,Feb. and Nov. 1922 and May, Aug. to Dec., 1923. Arthur Zimmerman, CFRC, Carruthers Hall, Queen's University, Kingston, Ontario, Canada, K7L 3N6

--Power transformer for HRO 50/60 (275 vac c.t.) 145 ma @240 vdc & 5.4A @ 6.3 vac.Also 4H4C regulator tube for HRO 60. Joseph M. Lukas, 710 Wilson Ave., Endwell, NY 13760 Tel. (607) 785-3747

--technical data booklet or copy for Supreme 89 Deluxe tube tester, with FB serial numbers. Also tube adapters and top lid for same. Will buy junk Supreme 89 Deluxe for parts (must have top cover). Tony DeMara, 25100 Hoover, Apt. #203, Warren, MI 48089

WANTED

--parts for AK breadboard: on-off switch, 900 ohm pot, rf coupling transformer to detector. Also want complete breadboards. Phil Goodman, 20341 NE 30th Ave. Miami, FL 33180 Tel. (305) 931-7189

--complete set, chassis or parts for Wondergram 45 rpm transistor phonograph 4½"x8 3/4". Made in England for Emerson Tele. and Radio Co.,1950's. Also wanted pre-1900 lightbulbs, unusual bases,sockets, Edison Electric Light Co. letters, bills, what have you. Bill Hope, 6486 Library Road. Library, PA 15129 Tel. (412) 831-7975

--your list of available receivers in the early 20's. Also am looking for an AK 20C. Jim Liebman, W7AQQ, 5757 E.14th St. Tucson, AZ 85711

--Radiola I and VI. Early Clapp-Eastham receiver. Have WD-11 replacements, New Western Electric 215-A mounted on WD-11 base.Direct plug-in same filament current & voltage. $15. ea. Charles Rhodes, Journey's End Road, South Salem, NY 10590 Tel. (914) 533-2503

--schematic or any info on Sonora chassis made in 1934 or later. Tubes 58,2A7,24A, 75,56,45 (2) and 6E5 tuning eye.Super-het in high boy console w/plug-in coils. E.M. Fowler, 124 Holly Lane, Morehead City, NC 28557

--anything to do with time & frequency receivers, oscillators,clocks,manuals, magazines,articles etc. Also wish to get in touch with collectors who have same interests. Gil Barber, P.O. Box 31654, Aurora, CO 80041

--porcelain rheostat for DeForest RJ-4 (page 70 of Saga).Also dimensions, photos,schematic to enable construction of a replica. Helmut Krueger, Nelkenstr.2, CH-8304 Wallisellen, Switzerland

--Bell System Technical Journal back issues Sept. 1959, March 1968, Nov. 1978 needed. Joel Ekstrom, W1UGX, Box 59, McLean, VA 22101 (703) 821-2287

--Models S-38 & S-53A for restoration. Please state condition. Paul B. Jenkins, 172 Concord Circle, Panama City, FL 32405 Tel. (904) 769-0144

--supplement tube test data for Jetronics (Navy) TV3-C/U tester. Need test data for late 9 pin miniature tubes e.g. triode & pentodes of the 6##8 variety. Mike Tuggle, 224 Carroll Parkway, Frederick, MD 21701

--Measurements Model 59, 59LF, or 59 UHF grid dip oscillator (Megacycle Meter) with coil set. Also, 4H-4C ballast tube is needed. Lloyd Zimmerman, 8448 No. Harding Ave., Skokie, IL 60076

--metal cabinet for Collins Model 52J-2 receiver. 19"x10½"x 12 3/4 deep. James B. Reid, 656 East Madison, Houston, MS 38851

--military handbook HDBK 161 Electronics Communications Equipment issued in 1950. Also any U.S. publications about Japanese WWII Military radios. Tajima Jaidnq, KD2HB, 57 Roaring Brook Road, Chappaqua, NY 10515 Tel. (914) 273-1750

--early quack medical violet ray devices. Also any bipolar open frame motors. Richard Cane, 8391 N.W. 21st St., Sunrise, FL 33322 Tel. (305) 741-6838

--old tube type guitar amplifiers, parts, and early guitar. SASE for list of radios for sale. John Wilson, 220 Sunset, Iowa City, IA 52240 Tel. (319) 354-8242

--antique tubes, Modern Electrics, Marconi Yearbooks, Murdock slide condensers,key, detector and wireless books. Marc Gottlieb, Box 1112, South San Francisco, CA 94083-1112

--copy of the Radio Amateurs Handbook for 1930 or 1931. Gordon Symonds, 26 Ossington Avenue, Ottawa, Ontario K1S 3B4

--National receivers and accessories, catalogues, literature and original manuals. Steve Barnes, K6PFW, 848 N. Silverwood, Upland, CA 91786

--manual for Lafayette Model KT-208 signal generator. John Schaffner, 72 Palmer Drive, South Windsor, CT 06074

--Collins 51J4 receiver or set of 3 good mechanical filters for Collins 51J4; 6KC filter for Collins 75A-4;Hallicrafters S-35 panoramic receiver. Sam Thompson,W6HDU, 1031 San Antonio Ave., Alameda, CA 94501 Tel. (415) 521-1429

--data wanted on Radio City Multitester Model 410.Also interested in any info on equipment made by Canadian Marconi up to 1939. Roger Hart, 314 Kensington Ave., Westmount, Quebec,Canada H3Z 2H3

--crystal sets from 1920-1960 desired by Austrian collector. Erwin Macho,Hoffingerg. 12-14/8/18, 1120 Vienna, Austria

--Tungar ½ amp bulb #289881; McIntosh C-8 Revised Preamp Owner's Manual; Carter 25 ohn Bakelite body filament rheostat;loop antenna for Scott Laureate. Have Scott Philharmonic dial scales for sale. G. Harris, 3212-36th Street, Lubbock, TX 79413 (806) 799-2589

WANTED

--beginning Belgian collector is looking for construction articles for simple homemade receivers (crystal {tube);also info on making components,copies OK. Would like to communicate with others. De Moor M.Vredestr 13. B-9720 De Pinte Belgium, Europe

--early Zenith Transoceanic Radios and transistor types Models 7000-1 and 7000-2 plastic types. William Wade,Jr. 657-14th Avenue, Prospect Park, PA 19076

DISPOSE/TRADE

--crystal cartridge for Philco model 46-1203; 7JP4 picture tube;8BP4 pix tube; 21CEP4 pix tube. Jack Caprice, RR 01, Box 478, West Winfield, NY 13499

--Thordarson-T3180 or equiv. D.B. mic transformer; ring style mic stand (table) for W.E. mic. David Eller, 14 Freedom Drive, Collinsville,CT 06022

--beginning collector looking for a battery radio/wind up phonogtaph combination. Fred London, 3716 South Country Club Way, Tempe, AZ 85282 (602)345-1091

--someone who will either sell or trade me the Crosley "Wigit" (or "Elf") cathedral radio. Have interesting equipment to swap. Please help. Dave Crocker, 6 Old Farm Road, Duxbury, MA 12332 (617) 585-5650

--variable condensers! Furnell taper coil,Faradon,Murdock 361 tapped disc, Brooks ribbon,Remler multi-gang,DeForest CV series,Wade square-law,Crosley C book, Connecticut J-107 or J-108,Bradleydenser, Freshman mercury variable. William Werner 2765 Sherwood Road, Minneapolis, MN 55432 (612) 784-3603

--National Velvet Vernier Type A dials, 4" dia., 0-100 scale; E.F. Johnson type 211 and 210 4-pin bayonet tube sockets with brown glazed ceramic base instead of the usual white. Don Chester, RR1, Box 281, Woodlawn, TN 37191

--telegraph bugs and keys etc. of unusual design or configuration. Rare models or one-of-kind types very welcome. Gil Schlehman, 335 Indianapolis, Downers Grove, IL 60515

--loop antenna for Radiola portable model 24;chassis for AK model 246 and cabinet for AK model 206. J. Albert Warren, Box 279 Church St., Waverly, PA 18471 (717) 587-2405

--QST all with covers fair to good, 1921 to 1936 to best offer. Carrier operated loudspeaker control panel working,with tubes $24 plus UPS. List of radio items for sale. Send SASE. F. Krantz, 100 Osage Ave., Somerdale, NJ 08083

--Books:"Short Wave" (e) 1st ed. 1930 by Leutz & Gable $70;"Hdbk USN Regulation Radio Service" (e) 1st ed 1913 $75;"Practical Wireless"(vg) 2nd ed 1917 by Bucher $35;"Principals of Radio Communication"1st ed US Signal Corp (e) 1922 $50. Other early radio books. J. Papovich, 216 Broadway, Westville, NJ 08093 Tel. (609) 456-4079

--Scott 1933 Deluxe AVC Super,lowboy console w/Arcturus tubes,good working condition, $175;General Instrument Mod. 671 6 tube TRF,good cond.,no tubes $50.; Crosley 601 Bandbox,fair cond,no tubes, $35.Omegas 1963 10 transistor radio, new in box $10;early transmitting tubes, send SASE for list. All prices plus shipping. Nick Lamendola, 42 Caroline St., Rochester, NY 14620

--antique radio transmitting and receiving tubes including VT types. SASE for list. Stan LaDage, 431 Oakland Ave., Maple Shade, NJ 08052

--giant list of radio-wireless related literature. Send SASE for list. Want radio, wireless and tv books and memorabilia before 1936. Jerry Simkin, 10 Avalon Lane, Matawan, NJ 07747

--WWII AM Aircraft Radios with tubes, exc. cond, ART-13 Collins 200 W HF xmtr, 10 channels, auto tune, 5 units, $99; SCR 522 Bendix 20 W VHF 4 channels xmtr/rcvr 110-150 MHZ $89;New var. cap. National TMC 200D, dual 200 pf, 3000 v $19; 1935 RCA record cutter/ automatic player $49; 1918 Victrola turntable $14. SASE for details. H. Robinson, W3LW, 816 Lincoln Ave., Palmyra, NJ 08065

--Signal Corps History in WWII.Three volumes.Also magnatron and similiar early tubes. Hart York, 17356 Miller St.,Fontana, CA 92336

--1936 HRO in working order.Speaker, coils 1.5-30mc, book, H/B pwr supply. SASE to Wm. Plimpton, W2IXH, RD6, Box 264, Wellsboro, PA 16901

--vintage TV's bought,repaired,traded and sold. Over 300 sets at new warehouse, TRK-12's to Predictas. Buying old and unusual televisions. Harry Poster, Box 1883, South Hackensack, NJ 07606 Tel. (201) 794-9606

DISPOSE/TRADE

--unusual "Dolly Parton" Emerson BD-197 wood table radio. See Radio Age Nov.'87 issue. Radio is in good condition except finish has been stripped off. Electrically restored and works well. $300. H. Brams, 2427 Durant #4, Berkeley, CA 94704 (415) 841-5396

--Electronic Industries Nov. 1942 (Vol 1,No1) to Jan 1959 bound $250 for all 28 volumes. IRE Proceedings 1915-1951 (minus 1917) bound $700 or trade for mint RA-10 or CR13. SASE for list of books and mags. from Millen estate. Merrill Bancroft, 169 S. Row Road, Townsend, MA 01469

--complete chassis and speakers removed from Grundig-Majestic console SO-202US. $20 plus 27 lb. UPS. Also Telefunken table model Caprice 5451W $20. plus 13 lb. UPS. John Uscinowski, RR#1, Box 379, Greenwich, NY 12834

--Att'n Morse Operators: Resonators for sale. Replicas of Bunnel "Acme" #7972. Black pedestals,hoods dark red,gray, WU green (approx.) and natural.Drilled for ML or local sounder. 4 ft. cord. $43 includes UPS shipping. Jack Proefrock, K6QEQ, 20814 S. Hawaiian Ave., Lakewood, CA 90715

--vintage radio books, magazines,service manuals and TV related literature. SASE for list. H. Fothe, 10 Jackson St., Sloatsburg, NY 20974

--Hallicrafters HD-9 xmtr complete unit vintage 1939 with manual,pickup only $175;Johnson "500" xmtr needs some work, $350 (UPO);Johnson Invader 2000,mint condx. $750. (UPO).Hallicrafters HT41, needs work $150.Tony Musero, K3UKW, 1609 S. Iseminger St.,Philadelphia,PA 19148 Tel. (215) 271-8898

--radio books,manuals,repair books, notes, service data for sale. LSASE for list #1. James Richards, 109 Macon St., Brooklyn, NY 11216

--Stewart Warner Porto-Bar radio Model R8531S. No bottles or glasses. Would like to trade for 1920's battery radios, crystal sets or horn speakers. Phillip Drexler, 1175 E. Ripley Ave., St.Paul, MN 55109

--Plug-in coils,Air King No.1,2,3 $20, Pilot (15) for $50. Other misc. Send SASE and description.Jerry Talbott, 1440 SW 239th, Hillsboro, OR 97123 Tel. (503) 649-6717

--Marconi CSR-5 receiver,good tubes,less power supply. $100. O.B.O. plus shipping. Gordon Wilson, 11108-50 Avenue, Edmonton Alberta, Canada T6H OH9

--rare "Major Bowes" novelty home microphone $90. SASE for list of 70+ radios. Ed Ripley, 2276 Holloway, Maplewood, MN 55109

--trade DeForest equipment for WWII communication gear I do not have or will pay cash. Also looking for unusual portables,Kellogg tube sets and fancy horns. Mel Rosenthal, 5 The Strand, New Castle, DE 19720 (302) 322-8944

--rebuilt Teletone TV149 7" TV;Hallicrafters TW1000 radio;Weston Model 45 DC voltmeter;rebuilt Sentinel 400 7" TV; Heathkit DX20 transmitter. Charles Harper, 2081 Harmony Court, Lexington, KY 40502 Tel. (606) 268-8549

--Freed-Eisemann Model 130, Newcombe Hawley Mod 587, Radiola IIIA,speakers, parts.Also some 50's HiFi equipment. SASE for list. Frank Cuva Jr., 1637 Hancock St., Ridgewood, NY 11385

--Philco 70's.90's.Erla clock cathderal, AK-447,Remler and Aztec cathedrals, German sets, Waltons Radio. Want AK558 cathedral,breadboard or parts,foreign radios,tube type HiFi gear,Pilot radios, unusual shortwave sets. Bill Moore, 1005 Fieldstone Ct., Huntsville,AL 35803

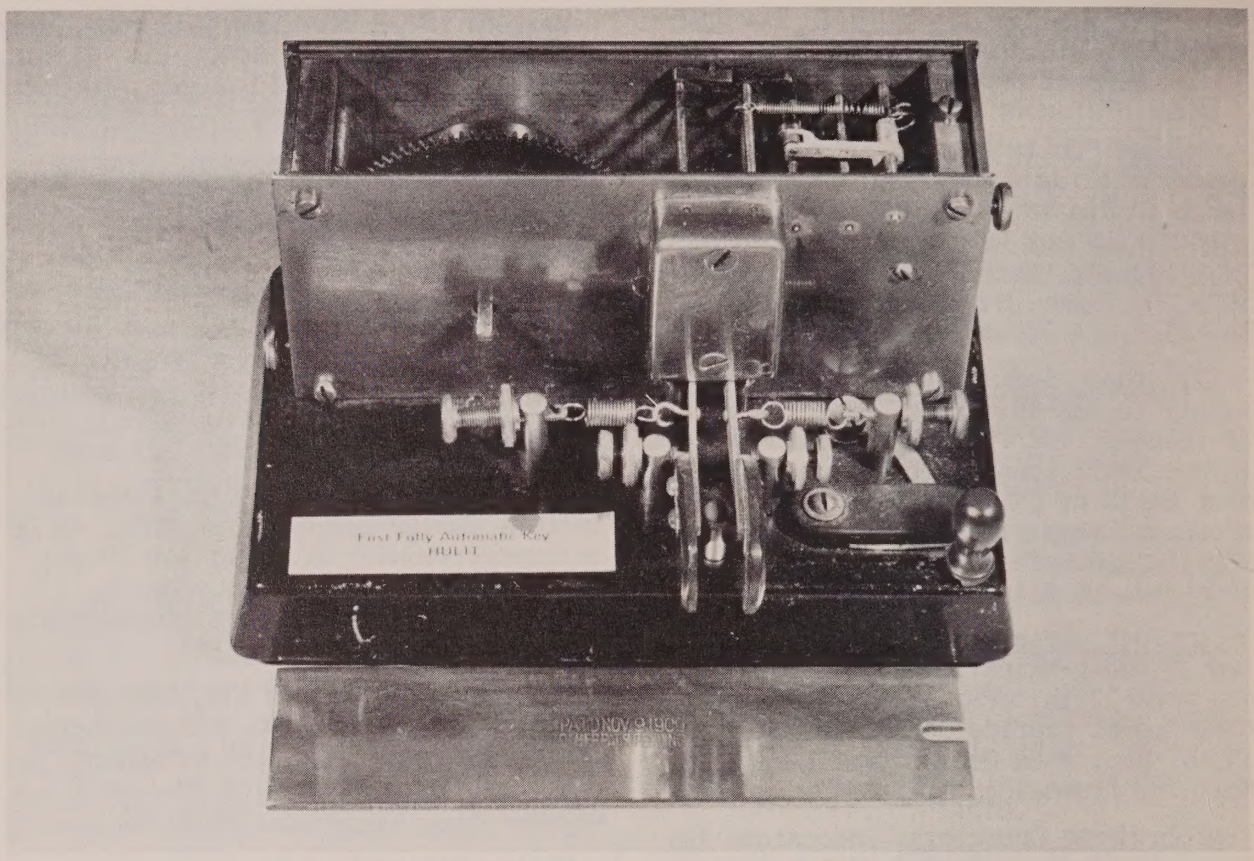
--half price estate sale.See ARC Sept 86 page 18,ARC Jan 87 and OTB Feb 87 page 29. John Wasiewicz, 229 Sarles Lane, Pleasantville, NY 10570

--National RAS 5,rack mount coil box, all coils,manual,no spkr,EH Scott Model 1522 excellent cond.,model AW-23 in Waverly Grand cabinet,very good cond., Phantom Deluze in Breamor cabinet,very good cond.Also RCA,Philco,GE and other floor cabinet sets. Bill Busetti, 1124 W. 2nd, Florence, CO 81226 (303)784-3540

--tie clasps and lapel pins, N.O.S. Radio related-Philco,RCA and more. Send LSASE for complete illustrated list. Michael S. Sabodish Sr., 11-A Matawan Avenue, Cliffwood, NJ 07721

--1915 Hawkins Electrical Guide #9 $10; 2- WD12 tubes $30; 1922 MESCO catalogue $25. All plus shipping. F. W. Chapman, Apartment B 218, 1130 N. Lake Parker Ave., Lakeland, FL 33805

--50 years of catalogs,flyers,brochures, manuals,Radio Masters,Tektronix,H-P, Dumont,Ham Radio,Television Service, old radios,parts. LSASE for 24 page list. F. Yonker, 7 Old Farms Road, Saddle River, NJ 07458 (201) 825-1895



HULIT TRANSMITTER

The Hulit key is a spring-wound device that makes dots automatically.

Members are becoming increasingly aware of the value of historical artifacts; keys and telegraph equipment are no exception. Our Key Editor, Lou Moreau, gave a brief history of the rare Hulit fully semi-automatic key on page 40, December 1985, *OTB*. The example shown was the "*lost*" Hulit formerly in the Dearborn Museum.

Shown above is a better picture of this unusual mechanism, which is on display in the AWA Museum. The only other Hulit is owned by Bill Suter of Dallas, Texas.

As to value, because this key is so rare and in excellent condition, its value is conservatively estimated at $1000. Try to find one!

DISPOSE/TRADE

--Loop antenna restoration/construction eased with modern technique. See Modern Electronics,Sept. 1987 pp. 56-64 or send #10 SASE for details to Brad Thompson, c/o GMT Interface Prod., Suite 233, 56-A Main St.,Maynard, MA 01754

--crystal sets,BC-109A,1917 WI-194 xmtr, tubes. SASE for list 87-2. Want DeForest catalogs,DeForest RJ4,Signal Corps P11 headphones. George Potter, 2069 Sienna Trail, Lewisville, TX 75067 (214)393-0020

--schematics 1920-60 for Radio/TV/PA/ham and misc. Your $3.50 investment returned if I can not supply at least your schematic. Also large file of electronic organ manuals. Send full description in first letter. Alton Bowman, RD 2, Chapin Village, Canandaigua, NY 14424

--RCA portable radio from '40s and RCA 45 RPM player from '50s. Henry Schwartzman, 133 W. Fourth St., Corning,NY 14830 Tel. (607) 962-0442

--Precision Tube Tester, series 10-12. Has wood case and roll paper tube chart. Will test nearly all early two and three digit numerical tubes. vg cond. $45.,plus postage. E. Eckley Jr., 1237 Principio Furnace Rd., Perryville, MD 21903

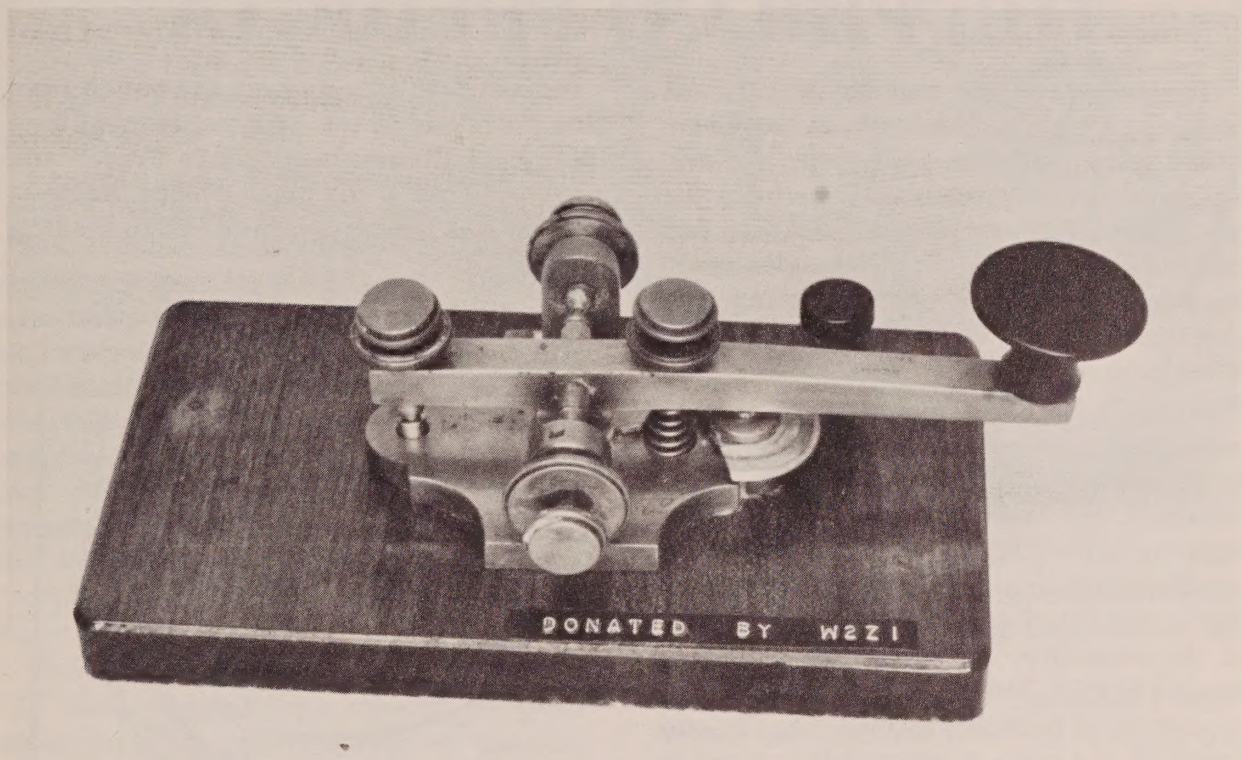
--old books, over 100 radio, telegraphy and electrical. Send SASE for list. T. Wickstrom, 1664 E. Shore Dr., St. Paul, MN 55106

--Power supply A,B and C voltages, 201A tubes,horns and earphones wanted. Will pay cash or trade. Stanley Tabaka, 13003, Stanton Drive, Minnetonka,MN 55343

(Continued on next page.)

KEY and TELEGRAPH

Editor: Lou Moreau, W3WRE



The 1865 "Altoona" key. It was manufactured by the Altoona Shops of the Pennsylvania Railrod specifically for use by operators who preferred to work with a straight lever type key. *(L.R. Moreau photo)*

QUE: *I have started a small collection of keys but I have no idea how to date them. Also, what standard do I use for these antiques to be able to value them for insurance purposes?*

ANS: It isn't possible to give hard start and stop dates since most types overlap because of continual manufacturers' production that was in turn based on operator preference for certain types. Remember that from the very beginning of the industry it was company policy to permit the telegrapher to work with the key of his choice, this mainly because he would do a better job and turn out more work if he were using his favorite type key.

The straight lever dates from 1844 throught 1900. Camelbacks from 1848 through 1900, thus both were produced in that period. The steel lever (most familiar) from 1881 to the present, and semi-automatics (bugs) date 1902 to the present.

Now in all of these there were dividing dates. For instance, in the straight lever and camelback keys, we have changes in the spring adjustment, prior to 1860 there was no such feature in the keys. Another method to date is the material used. The very earliest keys were red brass, the harder yellow brass was not introduced until the late nineteeth century while nickle plating came in about the late 1870's.

Another thing to check is the material used in the knobs. The earliest were ivory or ebony (that would be in the 1840's), then came hard rubber and finally, well into this century, the use of a dielectric.

Regarding value of a key. The AWA does not set prices on any antique equipment. Actually the value lies in the worth to the person who wants to acquire it.

Editor: Jack Davis
63 Midchester Ave., White Plains, NY 10606
All correspondence requires SASE for reply

THE PHILCO PREDICTA

The year was 1957 and our country was basking in the wonderful aura of the Eisenhower years. We were prosperous and avid consumers of the products that were coming off our American assembly lines. Japan was slowly recovering from the effects of its crushing defeat in WW II, and the industrial machine that is so dominant in the world today had yet to be created.

In the field of electronics, the U.S. reigned supreme; nowhere was this more evident than in the blooming television industry. Color television had made its appearance, but the high cost of the first receivers coupled with the small amount of colorcasts delayed any appreciable amount of sales until the early sixties. In the meantime, the large manufacturers, headed by RCA, Zenith and Philco were fiercely competing to satisfy a consumer demand for black and white receivers that seemed to have no limit.

The first generation of black and white receivers that had been introduced after the war were now being replaced with new sets at an unprecedented rate as prices dropped and screens became larger. The public was no longer satisified with the tiny seven and ten inch pictures provided by the earlier receivers. The demand now was for sets with picture tubes as large as thirty inches. In addition, they also wanted all the bells and whistles such as remote controls and cabinet designs that would add to the contemporary "*forward look*" that was being featured in everything from high-finned automobiles to kitchen appliances and furniture.

With the launching of Sputnik in 1957, the Space Age dawned, and it seemed as though everything we bought was affected by designs that would reflect our new future. Hotels and office buildings were given this new look, and even such ordinary things as vacuum cleaners and kitchen appliances emerged with a futuristic appearance. Television manufacturers, each striving to capture the lion's share of the market, began to introduce a variety of styles that would capitalize on this new trend. The products that appeared ran the gamut from the ridiculous to the sublime, ranging from lacquered Chinese cabinets to French credenzas. One of the most unusual items to appear was the cyclops-eyed Philco Predicta series.

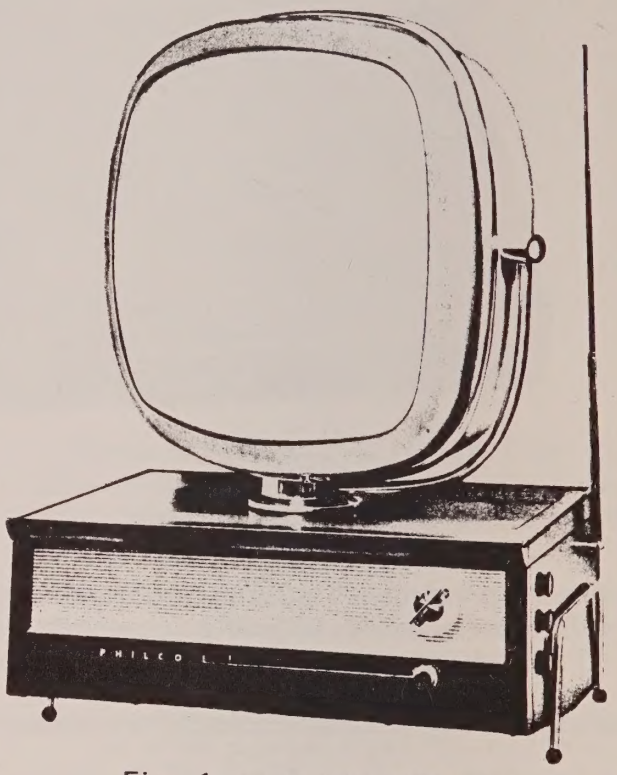


Fig. 1 **Model G-4242, 9L37 Chassis.**

Technical advances in printed circuits and wide deflection rectangular picture tubes made it possible to separate the viewing screen from the bulky receiver chassis. Philco seized upon this idea to create their astonishingly bizarre Predicta series. The console version had the chassis in an upright free standing pedestal type of cabinet, topped off by a 110' deflection tube that could be swivelled or rotated in accordance with the owner's desires. The effect was rather like the Nantucket lighthouse with a picture tube as the beacon.

In addition, there were two table models which are pictured here. The G 4242 had the same rotatable CRT as the console. The G 4710 was radically different in that the CRT

(Continued on next page.)

was entirely separated from the chassis and, like early radios that had separate speaker and chassis cabinets, allowed the owner to place the picture tube anywhere he wished. In this way, the receiver could be located in some convenient and accessible spot and the picture tube could be placed where it had maximum viewability. The idea was to free the viewer from having to move a heavy chassis everytime he wished to see the picture from a different vantage point.

Figures 1 and 2 show the ingenious engineering that made this separation possible. The CRT was electrostatically focused, eliminating any need for a focus coil. The yoke assembly was also reduced in size, allowing its inclusion into the neck of the protective shell enclosure. The video output stage was constructed on a small printed circuit panel and also mounted in the rear of the CRT housing. All power and receiver information to energize the CRT was carried in a twenty five foot interconnect cable and the CRT housing included a rotatable pedestal as shown in figure 4.

The receiver chassis was part of Philco's "G" line series and was a superbly designed black and white set that represented the best of the state of the art as it existed in 1958.

How well was this unusual set received? Unfortunately for Philco, the design was a little too "*far out*" for the public's taste and sales were disappointingly small. Like the Edsel, (introduced about the same time), the lack of public response led to it being discontinued, and the product was dropped from the Philco line.

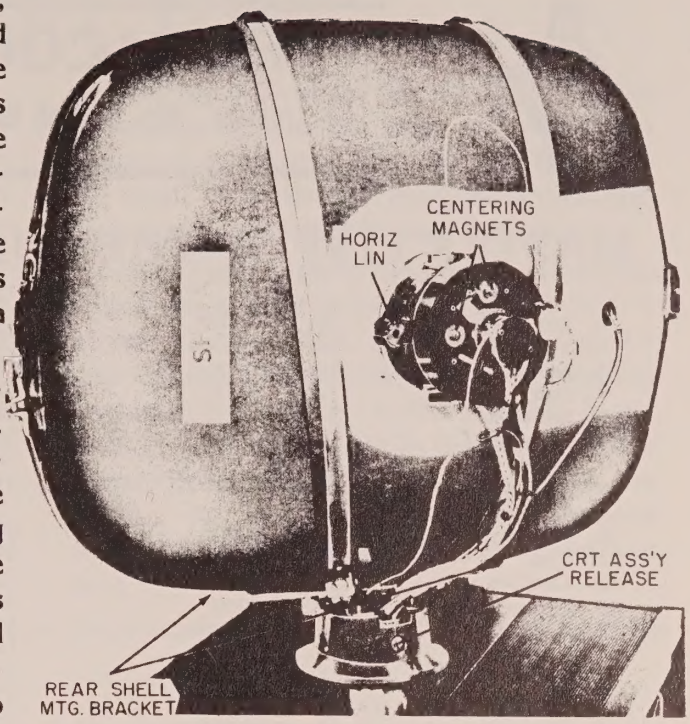


Fig. 2 **Model G-4242, rear cover removed**

The positive side, though, as far as TV collectors are concerned, is that it made the Philco Predicta a much sought-after collectible. Like the Edsel, it has become a symbol of a well designed failure, and even today the set is featured in ads and articles that picture an era when American manufacturing ideas dominated the electronic world and nothing was spared to translate our designers most imaginative ideas into reality.

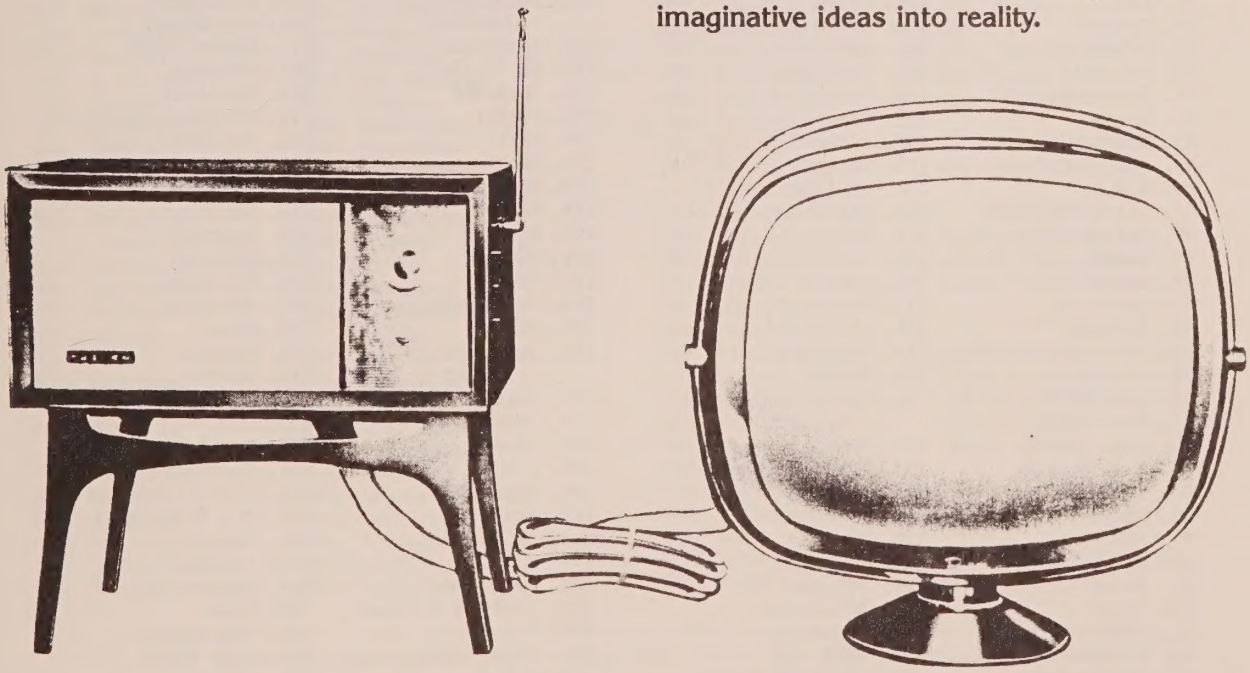


Fig. 4 **Model G-4710, 9L38 Chassis**

THE VACUUM TUBE

Editor: **Bro. Patrick Dowd, F.S.C., W2GK**

MASTER LIST OF THE 201/201-A BRAND NAMES

1. A-1 Wonder
2. AAA-6000
3. Ace
4. Acme
5. Advance
6. Aerodyne
7. Airhawk
8. Airline
9. Airmaster
10. Airtron
11. Ajax
12. Aladdin
13. Alltron
14. America
15. American
16. American Radio Tube
17. Amertron
18. Amor
19. Ampladyn IV (German)
20. Amplifier
21. Amplitron
22. Anylite Electric
23. A & P
24. APCO Twin
25. Apex
26. Apex Audiotron
27. AP Labs
28. Apollo
29. Aratron
30. Archatron
31. Arco
32. Arco-tron
33. Arcturus
34. Arion
35. Arlington
36. Armor
37. Armur
38. Arotron
39. Atlantic
40. Atlantis
41. Atlas Type 'A'
42. Atron
43. Atwater Kent
44. Audiotron
45. A.W.A. (Austrailian)
46. Barium Tube
47. Beacon
48. Belco
49. Belltone
50. Bestone
51. Birk Morton (BH)
52. Bluebell
53. Blue Bird
54. Blue Grass
55. Blue Ribbon
56. Blue Streak
57. Bluetron
58. Boehm
59. Bond
60. Boone
61. Bosch Radio
62. Brede
63. Bremco
64. Brightson Blue
65. Bright Star
66. Brilliantone
67. Buck
68. Bull Dog
69. Bumblebee
70. By Heck
71. C-201-A
72. Capex
73. Cascade
74. CD-201-A
75. Cecilian
76. CeCo
77. Champion
78. Chesterfield
79. Chibar
80. Clarion
81. Claritone
82. Claritron
83. Clearatone
84. Cleartone
85. Cleartron
86. Clover
87. Coast to Coast
88. Columbia
89. Comet
90. Commander
91. Concert
92. Concert Master
93. Continental
94. Cornell
95. Crescer
96. Cresent
97. Crosley
98. Croydon
99. Crusader
100. Crystal
101. Cunningham - GE
102. Cunningham (Westinghouse)
103. Cymotron (Japanese)
104. Daven
105. Davis
106. Defender
107. DeForest
108. Denmark
109. Diana
110. Diamond
111. Diatron
112. Dilling
113. Dis-X-Ron
114. Dixie
115. Donle
116. Double Life
117. Duovac
118. Duraco
119. Duratron
120. Duro
121. Dutch Radio Valve
122. Duval
123. DX-201-A
124. Dynamic
125. Dynetron
126. Eagle
127. Echotron
128. Eclipse
129. Econotron
130. Econotube
131. EDLO
132. Electrad Triode
133. Electron (6000)
134. Elektron
135. Elitetron
136. Emco
137. Empire
138. Empiretron
139. Emporer
140. E R C
141. ERLA
142. Eveready Raytheon
143. Excello-Tron
144. Falck
145. Farad
146. Fearnola
147. Federal
148. Franklin
149. Fultone
150. G-a-30
151. Gebhart
152. Gem
153. General Electric
154. General Electric (Canada)
155. Globe
156. Gloria
157. Gold Bond
158. Golden Comet
159. Goldentone
160. Gold Seal
161. Goldtone
162. Goode Tube
163. Good Luck
164. Grand Tone
165. Grant's Special
166. Green Seal
167. Harmonique
168. Harp
169. Harvard
170. 'H' Brand Blue
171. Heliodyne IV (German)
172. Hercules
173. H. H. Co.
174. High-Mu
175. Hi-Mu
176. H O
177. HR-O
178. Hygrade
179. Hylon
180. Hytron
181. Hy-vac
182. Ideal
183. Imperialtron
184. Jaeger
185. Japanese UX-201-A
186. Jayes
187. Jewel
188. Jove
189. J R C
190. Keen Tone
191. Kelly
192. Kelvin
193. Ken-Rad
194. Keystone
195. Kilburn & Clark
196. Kinodyne
197. Kleer-Tone
198. K M A
199. Knight
200. K R
201. Kwiklight
202. Lafayette
203. La Salle
204. Leader (The)
205. Leco
206. Lectron
207. Lee
208. Legion
209. Lewis De Luxe
210. Lincoln
211. Livetone
212. Lord Baltimore
213. Loudspeaker
214. Luro
215. Lyric
216. Macleco
217. Magnatron
218. Magnavox
219. Marathon
220. Marle
221. Marvin
222. Marwol
223. Master
224. Mastertone
225. Maston
226. MECO
227. Meier & Frank
228. Mellotron
229. Melrose
230. Mercury
231. Meteor
232. MIDCO
233. Milo
234. Milo Blue Bell
235. Miraco
236. Monotron
237. Murdon
238. Music Master
239. Musiktron
240. Musselman
241. Myers (O1A)
242. Nathans
243. National
244. National Products
245. National Union
246. Navagator
247. Neonlite
248. Neontron
249. Neptron
250. Neptune
251. Northome
252. Novatron
253. Novo
254. Nutone
255. Nu-Tro
256. Nutron
257. O K
258. O K R
259. Operatone
260. O & T Electric Co.
261. O - T Olney Co.
262. Ozarka
263. Panama
264. Paramount
265. Peak
266. Peertron
267. Penn Wave
268. Pep Boys
269. Pep Tone
270. Perfect

THE 201 TUBE

The 201/201-A is perhaps the most popular, most duplicated and most imitated vacuum tube ever made. To date, there are over 400 known brand-names under which this tube was released. The bulk of these tubes were manufactured by a relatively few manufacturing companies, located in the New York/Newark metropolitan area and the Chicago and San Francisco areas. This vacuum tube came on the scene with the birth of Radio Broadcasting and grew-up with the new industry.

Originally developed and manufactured by the General Electric Company, it was christened the UV-201 and released by RCA in December of 1920 under the '*Radiotron*' label for distribution in the east and under the Cunningham label (C301) for distribution in the west. It underwent many structural and electrical improvements over the years.

In 1923 an improved tungsten filament was added and it became known as the UV-201-A (C-301-A). In 1925, with the addition of a new long-pin composition base, it became known as the UX-201-A (CX-301-A). In the early 30's it was adapted to the new '*modern dome*' bulb and its name shortened to the '01-A. It continued to be manufactured through the 30's for replacement purposes only.

271. Perfectone
272. Permatron
273. Perryman
274. Phenix
275. Philco
276. Philips (Holland)
277. Philmore
278. Phonotron
279. Pilot
280. Pilotron
281. Pingree
282. Pioneer
283. Playtron
284. Pliotron
285. Powertone
286. Powertron
287. Premier
288. Prextro
289. Princeton
290. Pur-A-tone
291. Puritron
292. Q R S
293. Quadrotron
294. Qualitron
295. Quality
296. Q. V. Tron
297. RA-DEX
298. RA-DEXTRON
299. Radios
300. Radiotone
301. Radiotron - GE
302. Radiotron - Westinghouse
303. Radiotron - RCA
304. Radiotune
305. Rainbow
306. Rayvac
307. Rayo
308. Raytheon
309. R C R
310. R.E. 58 (Telefunken)
311. Receptron
312. Regal
313. Reliance
314. Rextron
315. Ritetone
316. Robun
317. Roice
318. Rolls Royce
319. Roxy
320. Roy*
321. Royal
322. Royal Blue
323. Royale
324. Royalfone
325. Royaltron
326. R S K
327. R V C (Canada)
328. RY-TONE
329. Samson
330. Savoy
331. Schickerling
332. Sea Gull
333. Shelby
334. Shepherd
335. Silver
336. Silver Domino
337. Silver King
338. Silver Shield
339. Silvertone
340. Silvertron
341. Simplex
342. Skyline
343. Sky Sweeper
344. Slagle
345. Solartron
346. Sonotron
347. Song Bird
348. Sonora
349. Sovereign
350. Sparton
351. Speed
352. Standard
353. Standard Black-Base
354. Stanton
355. Star (NJ)
356. Star-Ko
357. Star Tube (Holland)
358. Sterling
359. Stewart-Warner
360. Stratford
361. Strongson
362. Sturdy
363. Sunlight
364. Super Airline
365. Superior
366. Superior Tone
367. Super Silvertone
368. Supertron
369. Supertron Precision
370. Sylfan
371. Sylvania
372. Taylor V.T. Co.
373. Tayrad
374. Teletron
375. Televocal
376. Teltron
377. Thermionic
378. Thermotron
379. Thoria
380. Thurman Thermionic
381. Tipless-Rytone
382. Titan
383. Titania
384. Trail Blazer
385. Traveler
386. Trav-Ler
387. Triad
388. Triple Tone
389. True Value
390. Tung-Sol
391. T - X
392. Ultra Type-201-A
393. Unitone
394. Unitron-No-Bee
395. Universal
396. Ureco
397. USALITE
398. Vactron
399. Vacuum Tube Type 'A'
400. Van Dyke
401. Van Horne
402. Venus
403. Vesta
404. Vestra
405. Viking
406. Vim
407. Vitavox
408. Vogue
409. Voltron
410. Volutron
411. Vox
412. Wards
413. Wardware
414. Wasco
415. WDRC
416. Weile
417. Weltone
418. Western Electric
419. Western Lab
420. Western Quality Tube
421. Westinghouse
422. Westinghouse (Canada)
423. Weston
424. Westron
425. Wizard
426. W L S
427. Wonder-Tone
428. Wonder Tube
429. W R C
430. Yankee
431. 'Z'
432. Zenith
433. Zetka
434. Zetka Process

435. CW-186 (Navy)
436. VT-30 (Army)

Plus numerous tubes marked 'Type 201-A' without brand names.

Note: The 201-AA, the 201-B & the 201-C are 201-A's with low current-drain filaments. (Early 30's)

Brother Patrick Dowd/ W2GK

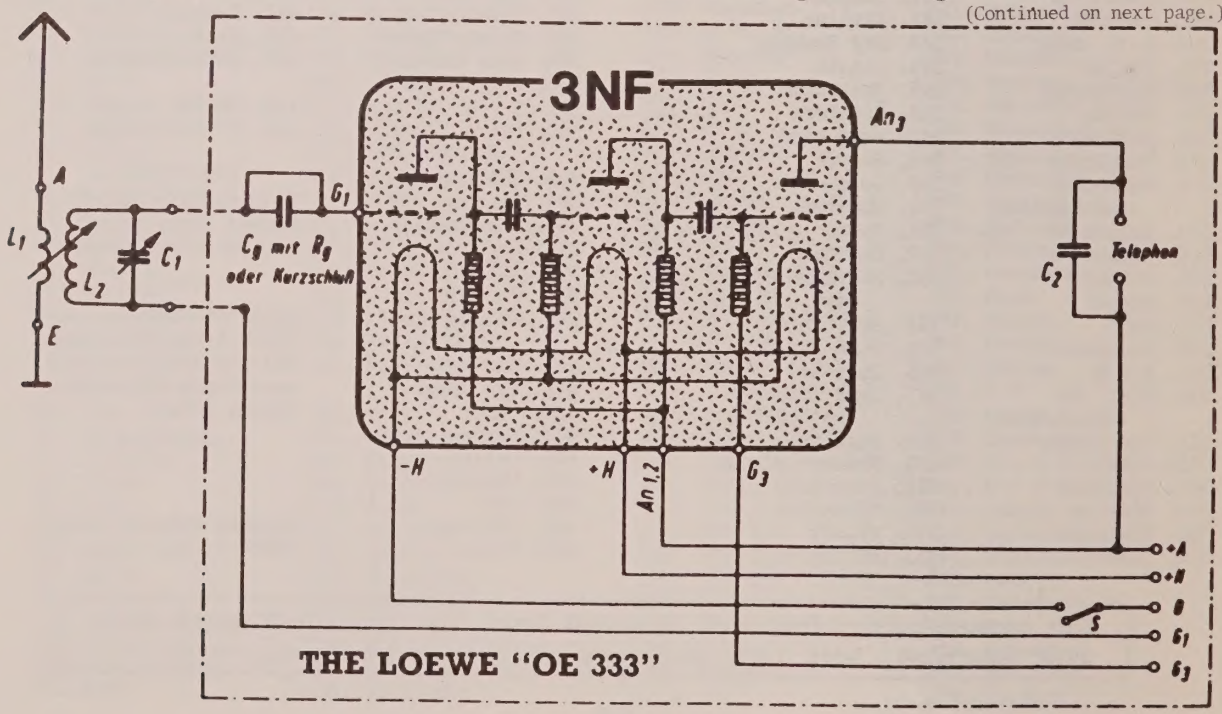
The above information was compiled from the contributions of many AWA members, both past and present. A sincere thanks to all.

THE LOEWE "OE 333" RECEIVER

To complement Conference guest speaker's talk on Loewe valves, Max deHenseler exhibited a Loewe receiver (OE-333) and six rare Loewe tubes made between 1926 and 1930. For his efforts, he was given the Conference Display Award.

The Loewe "OE-333" receiver was the attraction of the 1926 Berlin Radio Show. Produced by Loewe Radio A.G. in Steglitz, Berlin, this receiver was quite ahead of its time and it can be credited for being the first receiver using an "integrated circuit", i.e. the

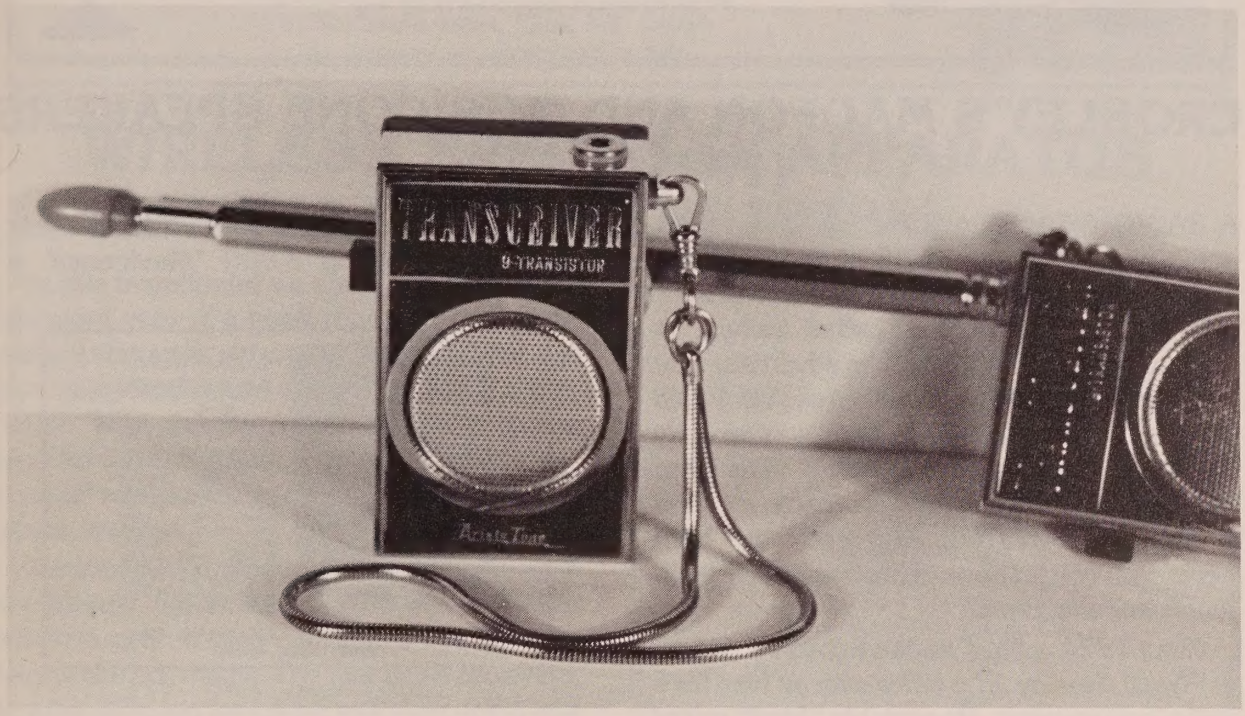
(Continued on next page.)



THE LOEWE "OE 333"

UNUSUAL RECEIVERS

Editor: Dan Boucicault
Madison, Wisconsin



ARISTO TONE CB RECEIVER

This is one of the neatest little CB transceivers I've seen. The set is assembled in a heavy, attractive, metal case with a sturdy, plated carrying chain. Because of the compactness (2" x 3") it was not possible to house the conventional 9-volt battery. Instead, it uses (5) #625 disc type cells.

Small lettering indicates it was made in Japan, October, 1965, and distributed by Aristo Tone Electronics, New York City. A built-in crystal confines operation to only one frequency. It uses 9 transistors and a screw-in antenna. It easily fits in my shirt or pants pocket.

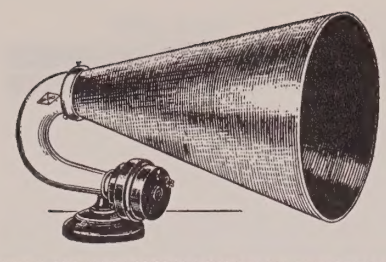
THE LOEWE "OE 333"

Loewe 3-in-1 "3NF" tube. This tube was unique in that it contained within the bulb not only a multiple tube consisting of three triodes but also two anode resistors, two grid resistors and two coupling capacitors, making it a complete detector followed by a two stage resistance coupled amplifier.

The rest of the receiver, comprising only three other components: an on/off switch, a variable condenser and a set of tuning coils, was contained in a solid oak base, weighing 800 grams and measuring 19 cm wide, 21 cm high (including the tube) and 14 cm deep; it could tune MW/LW from 200 to 2000 meter by changing plug-in tuning coils: it had connection leads to a 4 Volt filament battery and to a 90 Volt plate battery, with an outlet for an external speaker or earphone.

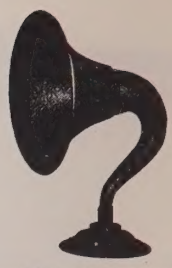
The OE-333 cost RM 39.50 including the 3NF tube and the radio license. It appears that the developmnet of the 3NF and other multiple tubes had its origin in the fact that, in Germany at that time, a tax on the use of radio receivers was determined in part by the number of tubes in the receiver. The Loewe company capitalized on this situation and Professor Manfred von Ardenne spearheaded the research.

The OE-333 was followed by the OE or RO 433 set with reaction coupling and housed in a black molded bakelite case. From 1926 to 1932 it is estimated that more than one million of these sets were made. Where are they now? It is a very very rare set commanding very high prices.



The LOUDSPEAKER

Editor: Floyd Paul, W6THU
1545 Raymond, Glendale, California 91201
All correspondence requires SASE for reply



CROSLEY'S MAGFON AND MUSICONE SPEAKERS (1921 - 1927)

A *RADIO NEWS* magazine of June, 1921, contained an advertisement of Crosley Cabinets and showed a radio horn speaker designed in an upright cabinet 12x8x8 inches. It was named the MAGFON. The advertisement claimed that any "*watch case*" receiver would work as a driver. ("*watch case*" was an early definition of an earphone piece.) The horn speaker was advertised for many months (even into 1923) but apparently the horn never sold well for none of the horns have been found in collections.

Circa 1924 a Mr. Charles Peterson arrived in Powell Crosley Jr.'s office with an idea for a radio loud speaker. He took his "*idea*" out of a newspaper wrapping and showed it to Mr. Crosley. Mr. Crosley offered Mr. Peterson the use of a laboratory, assistance and struck up a deal. (A *RADIO*, March, 1927 Crosley advertisement describes these events.)

Some history on Charles Peterson was found in a Seattle Pacific College's Alumni magazine article. The Autumn, 1967 article, contained the following about Charles Peterson. Charles grew up in Seattle and went to Queen Anne High School (graduated 1912) and to the University of Washington where he received an electrical engineering degree. He was in the Army Signal Corp during WWI, then worked for A. H. Cox in Seattle. Later he was in charge of the testing laboratory for Kilbourne and Clark Manufacturing Company of Seattle and then he did graduate work in chemistry at the University of Washington. His career took him to Greenville College, Illinois, as head of the chemistry department. It was reported Charles had been working on an invention of a paper cone speaker since high school. He resigned his position at Greenville, bought a car, and set out with his wife to demonstrate his speaker ideas to radio and phonograph manufacturers. The Crosley Radio Corporation was among his stops and the article states the Crosley Corporation "*snapped up*" his new speaker. Within a year they were making 3,000 'Musicones' a day..."

Radio News, June 1921

By the time Crosley reentered the speaker business some 2,000,000 horns had been sold. The first ads for the Crosley cone speakers appeared in late Spring of 1925. The trade name applied to the cone was *Musicone*. The ads promoted a new cone speaker product that would soon be replacing horn speakers. The first cone speakers came in two sizes, a 12" diameter cone and a 16" one. The 16" cone first sold for $17.50 but in November 1925 was reduced to $14.75. Later a Musicone was made in a wood cathedral cabinet and introduced in the Fall of 1925 for $27.50.

In 1926 and 1927 Crosley added Musicones in the design of a floor stand (Tilt Table) and a console model with legs. Musicones were advertised by Crosley into 1928. The Crosley ads said the new paper cone gave "*pure tones*" without distortion. Apparently the Musicones sold well, for the March 1927 Crosley ad in *RADIO* magazine said Mr. Peterson had received royalties on his speaker design of over $90,000.

Ed. Information on Charles Peterson was obtained from a 1967 Seattle Pacific College Alumni magazine supplied by Warren Green. Charles Peterson, now a Silent Key, retired from Eastman Kodak Company and was an AWA member.

The BOOK COLLECTOR'S CORNER

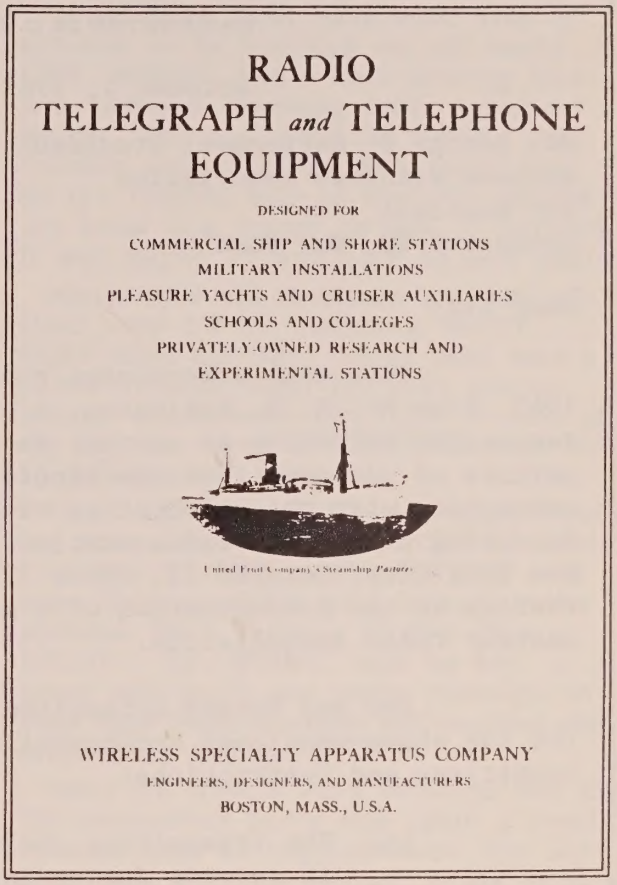
Editor: James Kreuzer, N2GHD
6270 Clinton Street, Elma, NY 14059
All correspondence require SASE for reply

WIRELESS SPECIALTY APPARATUS COMPANY CATALOG 1919 (83 PAGES)

In this installment we shall depart from the standard vein of a book report, reviewing an early catalogue produced by the Wireless Specialty Apparatus Company in October, 1919. WSA was the chief supplier of wireless gear for the U.S. Navy, and designers of commercial equipment used on shipboard and in shore stations.

Personally, I prefer this catalog above all in my library. Illustrated profusedly with early wireless gear, it also contains a detailed history of the company. The rare IP 76 receivers, in a few differing forms are well described, and some high power commercial and military transmitters. Their most efficient receiver, the IP 500, comprises a small part along with it's compact brother, the IP 501. Each is listed with care as to their operation and construction. Many various types of transmitting and receiving accessories are included. Worth noting is the Clark Tone Tester, which was a simple receiver used in monitoring the spark tone from the output of the station's transmitter. The catalogue includes some very large antenna switches, capable of handling up to 10KW, heavy duty keys and other related equipment. Many detector stands are shown, following a fine history of the crystal detector.

Another interesting chapter is devoted to the patent contributions of WSA Company. Important in the development of wireless, they encompassed most of G. W. Pickard's inventions. Besides the crystal detector, the early direction finding loop (1908), constant impedance audibility meter, testing apparatus for detectors and receiving circuits using oscillations from a buzzer are mentioned. Shown on page 32, is my favorite photograph, of 39 IP 500 receivers and 26 audibility meters lined up in the factory. The caption below reads "*Part of an order of 500 receivers manufactured for the U.S. Navy by the WSA Company.*"


RADIO
TELEGRAPH *and* TELEPHONE
EQUIPMENT

DESIGNED FOR

COMMERCIAL SHIP AND SHORE STATIONS
MILITARY INSTALLATIONS
PLEASURE YACHTS AND CRUISER AUXILIARIES
SCHOOLS AND COLLEGES
PRIVATELY-OWNED RESEARCH AND
EXPERIMENTAL STATIONS

United Fruit Company's Steamship *Pastores*

WIRELESS SPECIALTY APPARATUS COMPANY
ENGINEERS, DESIGNERS, AND MANUFACTURERS
BOSTON, MASS., U.S.A.

This catalogue cannot be surpassed; the 93 photographs are clear and descriptions extremely precised. If other manufacturers of early equipment patterned their catalogues accordingly, many more questions could be answered.

Though original copies are rare, reprints are now available. The catalog is an invaluable reference for WWI – era commercial gear.

Jim and Felicia Kreuzer

HAVE YOU RESTORED a broadcast receiver lately? Write and tell us about it. If possible, include a picture. Editor, Antique Wireless Association, Main Street, Holcomb, New York 14469.

AMATEUR RADIO

Editor: Ken Gardner, W2BGN
42 Oakdale Avenue S., New Hartford, NY 13413
All correspondence requires SASE for reply

Question: When was the last license issued for spark transmitter operation in the U.S.A.?

Answer: *We don't know, but it could be when the F.C.C. allowed AWA to operate a sync rotary spark transmitter at the 1962 ARRL Convention. This is the letter authorizing the operation.*

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON 25, D. C.

October 5, 1962

ADDRESS ALL COMMUNICATIONS TO THE SECRETARY

IN REPLY REFER TO:
7510

Mr. George G. Batterson, President
Antique Wireless Association
126 Westfall
Rochester 20, New York

Dear Sir:

This will acknowledge receipt of a letter dated September 20, 1962, from Mr. E. B. Redington, a historian of your Association, requesting authority to operate an amateur spark transmitter for periods of not more than one minute per hour at the exhibition in connection with the celebration of the 50th Anniversary of the licensing of amateur radio stations being held at the Statler-Hilton, New York City, October 13, 1962. The purpose stated is to provide realism to the demonstration of a working exhibit of a typical 1912 amateur radio installation.

You are hereby authorized to operate the spark transmitter for the above-mentioned demonstration purposes subject to the following conditions and restrictions:

(a) The transmitter shall not be operated for more than 15 seconds during any hour of the period from 0800 to 2400 EDT on October 13, 1962.

(b) No antenna system shall be utilized.

(c) The power input shall not exceed 250 volt-amperes.

(d) The wavelength shall not exceed 180 meters.

(e) The operation shall not cause harmful interference to any existing radio service.

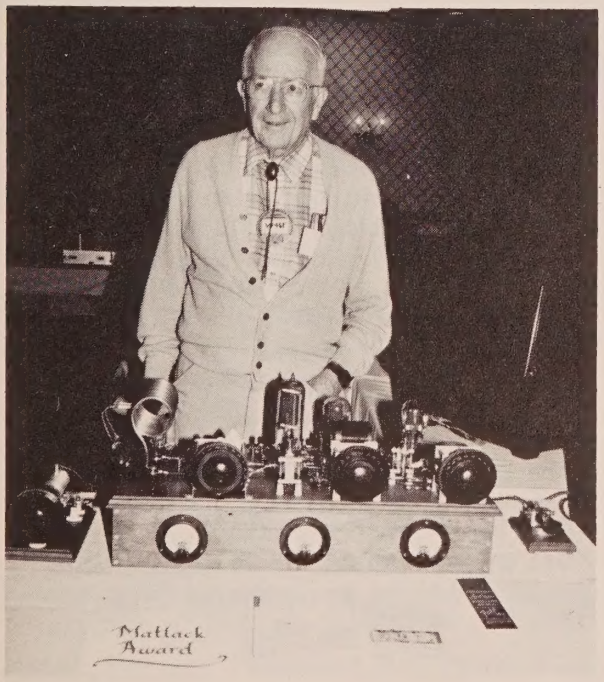
Very truly yours,

Ben F. Waple

Ben F. Waple
Acting Secretary

RESULTS OF 1929 TRANSMITTER QSO PARTY

CALL	#QSO'S	TRANSMITTER	NAME
W1DX	17	'45 Tnt 6w.	"By"
W1HH	17	Tnt 7w.	Bob
W1KEK	-	No log	
W1BVL	5	'45 Tptg 10w.	Dick
KB1UV	14	'45 Hartley 8w.	
W1SZJ	12	6L6 xtal	Poco
W1BPI	9	Tnt 8w.	Alex
W2AN	7	'45 Hartley 8w.	Bruce
W2BJI	29	202 Hartley 9w.	Fran
W2FB	11	'45 Harley 9w.	Howard
W2FW	9	8 watts	Jack
W2SN	2	210 Hartley 9w.	Cliff
W2EFI	-	201A Hartley	Hal
W2HIN	19	210 Hartley 9w. (3 tube regen)	Gil
W2AFE	10	Tnt 8w.	Cliff
W2FFU	-	No log	
K2LP	8	'10 Tptg 9w.	Bud
K2RY	7	210 Hartley 8w. (SW-3 Rx)	Jack
W2VDI	27	Tnt '45 9.5w.	- -
W3DB	19	211 Hartley 8w.	Dave
W3INV	6	210 Tnt 6w.	Ace
W3VVS	12	210 Hartley 9w.	Paul
KW3P	-	No log	
W4COC	16	210 Tnt 8w. Rx:Early "Pro"	Tom
W4NM	12	210 Tnt ('24-'27 reg. rx)	Frank
W4IVB	5	Hartley 8w.	Tim
NA4G	-	Hartley 1w.	Bob
W4OTN	9	210 Hartley 8w.	Len
W4VBX	23	210 Hartley 9w. (SW-3 Rx)	Don
AA4RM	--	No log	Marty
W8JYY	14	'10 Hartley 8w.	Ed
N4EE	-	No log	Wells
WB9EIE	7	210 Tnt 9w.	- -



COMMENTS:

W2BJI "Cuz" Fran was high scorer with 29 different stations worked. There were 33 different AWA stations participating with very early single-tube type transmitters including two "new" stations in mid-west: W8JYY and WB9EIE which made things interesting.

There has been no word from other mid-west or far west stations which is disappointing. Likewise, no activity from our Canadian members in VE-land.

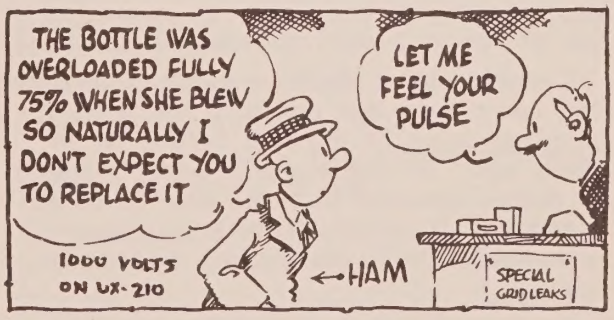
"Cuz" Fran must have some kind of antenna as he knocked 'em off easily. Cliff, W2AFE, had a ball working stations between throwing knife switches! W4COC took the prize for having the hairiest note. A fellow ham called him on the twisted pair to say, "-- he did not know how rough it was.." Actually it was maybe T7 and easy to pick out!

Many used old receivers and lots of them were SW-3's including W8JYY.... K2RY says his SW-3 works best with a short antenna. Cliff (W2AFE) wishes fellows would send AWA AWA instead of CQ AWA as many non-AWA members responded to the CQ's..

"By" Goodman, W1DX was really knocking them off with his beautiful T9 note from his '45 TNT. "Poco",W1SZJ sent some fb pixs of his gear including the spotless SW-3...also a fb foto from KB1UV. Ed, W8JYY, said he had a great time as it was really nostalgic to hear sigs from old-time self-excited rigs after many years.

Many FB letters were received and the '29 transmitter party was again a great success from all the feedback..the October date certainly helped to get more fellows interested...

73, Bud, K2LP



Bill Grenfell, W4GF, former FCC Chief, admires 1932 3-stage transmitter built by John Rollins, W1FPZ. Recipient of the 1987 Matlack Conference Award, it consists of 47 osc.-210 buffer with a 211 in the final.

I N - H O U S E

I just received my copy of "Spark Gap Times" - official publication for OOTC. W2JE is again editor. I sometimes think Gus is crazier than I am for getting into thankless jobs - and he has been at it longer,racking up around 40 years between OOTC and QCWA...

On the subject of publications, Bruce Eving has started a newsletter for FM radio buffs. Drop him a letter if interested: Box 24, Adolph, Minn. 55701

Astronomer Grote Reber of Tasmania, Australia, is spending the winter months in Canada doing research in the 100 meter range. Members interested in astronomy are advised to read a paper he wrote in the IEEE Transactions on Plasma Science, Vol. PS-14, No.6, Dec., 1986 titled "Intergalactic Plasma" in which he discusses the "red-shift" theory. Reber has been making 144 meter observations in the southern hemisphere for many years with a 3520 ft. circular antenna consisting of 192 half-wave dipoles supported by 128 80-foot poles. A phasing arrangement allows him to steer or direct the array. He is a strong believer in the "steady-state" theory and has some doubts about the use of the red-shift to measure distance.

I receive all 4 amateur radio magazines and can't help but compare the amount of advertising in current issues to 50 years ago. In one current issue I found 46 pages devoted to radio and 56 to advertising. I suppose this is necessary with present-day publishing and mailing costs.

Are you interested in early landline telegraphy? Drop a line to Lynn Wilke, WA2DAC who is working on a project concerning communication at the time of Custer's Last Stand and traffic from Little Big Horn. QTH: Box 446, Peru, N.Y. 12972

A recent issue of "Stereo Review" magazine reviewed a pair of headphones selling for $215. It is common for audiophiles to pay $1000. for speakers but $200. seems a little high for headphones..The same issue described a moving-coil phono cartridge (Alpha Genesis 1000) using a "horizontal coil winding" instead of the conventional winding along the vertical axis. This little gem sells for $800. and has a frequency response of 10 to 75,000 cycles (yes,75,000 cycles??!!). Old age has reduced my hearing range to 8000 cycles so I decided not to buy...

Did you know that one third of total households in Ireland now have cable TV?

An article in a recent publication covered Lee deForest's radio broadcasting at the "Met" in 1910. The knowledgeable author spoke of deForest as the "Father of Radio" having invented, quote, "The audion amplifier.....,the three-electrode tube, and the four electrode tube." He must have counted both filament leads to get 4 electrodes!

Ha hah!..my little note in the last OTB about questionable dealer/collectors has paid off. I've received the names and addresses of several who have pulled tricks via the U.S. mail. Keep me posted. It is interesting and warrants a future story on fraudulent one-sided mail transactions..

Report on Annual Radio Club dinner: Vy fb beginning (cocktail hour) when I met old friends I don't often see including Alan Dorhofer,K2EEK (Editor "CQ") with xyl Bonnie, and Gus Gironda,W2JE of OOTC/QCWA fame. Had friendly chat with Frank Gunther (Rel) and Bill Eitel (Eimac) with whom we discussed the Armstrong Foundation and the need to make the public more aware of Armstrong's contributions to radio development. Excellent dinner seated at table with AWA members followed by program of long-winded transmissions at audible level of Q3 S5 at which time we decided to pull the big switch (QRT) and left with several others before it was over...SK..

Finally had an opportunity to see Mike Adams' TV series on "Radio Collecting" on PBS. Nice job considering little if any rehearsals. Most action and participants were members of SCARS. Was real pleased to see Don Wallace,W6AM and his high power station in the film. The project must have been quite an undertaking. Adams' and his crew are to be congratulated...vy fb!

73, H.W.

NEW MEMBERS

who are (or were) with the electronic communication or related industry.

Information in this column is obtained from the member's Application Form. If you are not listed, you did not fill in the form properly.

Jack Tiggleman (KA8FQS) Station WZND

Maynard Lonis (W2MXE) Radio Officer Mer. Marine, G.E. Co.

George Briggs (W8TWS) RCA Research

Charles Graham (K2GUE) Editor, Elect. publication

Bob Oliver, Stats. WONO, WAER, WFBL

Jacques Motte (France) Radio electronics

Guido Roels (Belgium ON4GRL) Radio station engineering.

Philip Taylor (England) Radio officer in Merchant Marine

Michael Rokochy, A.T.& T., Bell Labs

Art Rideout (WA6IPD) RCA, Research Harvard Univ.

John Geczi (W8OOP) Eng. TV stat.

Tatsurn Iharn (JA4AO) Int. Program Man.

Wm. Yankeiwicz (VE4ANY) Radio officer merchant marine.

Homer Henrioud CAA, FAA electronics

Douglas Stivison (WA1KWJ) Former Asst. Editor "Ham Radio" magazine.

Raleigh Utterback Stats. KOMA, KING, KVI, KRIV, G.E., Amperex.

Lee Becker (W2ISC) Stat. KDLK

Wm. Jones (N2FWS) N.S.A., G.E.

Lewis Gaul (K2YHY) AT&T longlines.

David Bachus (KA8ZLA) Electronic man.

Goyn Reinhardt (W2AF) Signal Corps Lab

Carl Howard, Station WMMR

Edward Kreutter Station WTNY

Larry German, King Radio Corp.

Chester Gehman, Prof. of Electronics

Ted Bongiouanni (KA2ZSK) Heath Co., Zenith Corp., etc.

Dr. Thomas Rhea Moog Electronics

Everett Rowley (W3CSW, W2LXH) Stations WINE, WGHF, WLAD, Link Radio Co., etc.

Will Herzog (K2LB) HarrisR.F. Commun.

Robert Hodge, Station WSEN

Edward Schwartz, Calspan Corp.

Wally Roworth (N2GDD, K2AED) Sperry Co.

John Sullivan, P.B.S.

Robert McKinley (W2OMR) Tech. Dir. Research & Development U.S.A.

Joseph Bertani (WB5IQJ) Microwave Maint.

George Brown (8CUD, W8YET) Ship oper. and BC engineer

Joseph Kramer (K3ES) Ship Radio Officer and Coastal Marine operator

Ed Pohlig (W2KTU) Grumman Aerospace

Norman Krim (W2AUP, W1BKD, W1BYO) Raytheon Corp.

Robert Rosenow, Stat. WRVA, WRCP, KTTS

Charles Griffen (W1GYR) Station WJMJ

Mark Schubin, Stats. WCPR, PBS, etc.

Don Myers (KA9YIJ) Temple Radio Co.

Bill Slep (W4FHY) Owner radio store

Fred Clark (K4ET) Stats. WOZ, WQAM, WIOD, WFTL, WGBS

Don Ironside, Station WHCU

Ray Collins (WB2OQV) General Elect.

M.E. Waddell, Broadcast engineering

H. Ken Ruhl, General Elect. Co.

Sebastian Phua (Singapore) Radio Oper.

Howard Eicher (K9TVZ) Magnavox Corp.

Daniel Servatis, Stats. WRUW/ WKGW

Rudolph Dichtl (WN9JDA) Bell Aerospace

Michael Bittner, Magnavox Corp.

Ralph Rickett (W8BTW) Broadcast Eng.

George Benning, Rockwell (Collins Radio)

Donn Blomerth, Electronics Unltd.

Carl Hicks, Harris Corp.

Lawrence Chestnut (KA1GIC) Stat. NCU at Cutler, Maine

Leighton Greenough, RCA Labs

Robert Keys (NA4G) Station KSPC

Wm. Elledge, Broadcast engineering

Jim Farlem, Station WMKX

Jay Sterin, Stats. WKFM, WFBL

Dan Clark, Roberts & Clark Co. and Station WLAW

Howard Weeks (K5JCP) Commun. Sys.

James Campion (7CC, N7BGR) U.A.L.

Benjamin Freet (WA3TRD) Elect. Tech.

Robert Jewell, Stats. WFUV, WRRC, WLIR, WRWW, KZMD

William Hargens, I.T.T., RCA, etc.

James Daniel (N2GCA) RCA

Vance Gildersleeve (K5CF) BC/TV Eng. Radio Officer Pan Am.

Dave Atkins (W6VX) Heinz & Kaufman, Dollar SS Co., Remler Corp., Eimac

Hawley Oefinger (W1GUP) Dir. Commun.

Ed Curran, Station WGN

W. Scott Oldham (KA9WHQ) Illinois State Police Communication

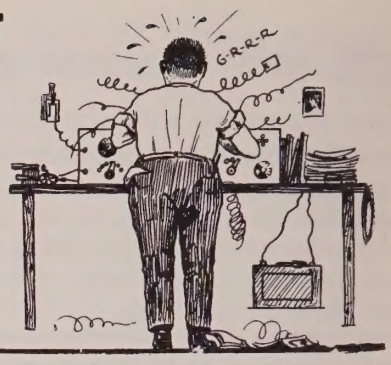
Robert Gomez (N7XE) Station KDWN

Wm. Crawford (England) Royal Aircraft

Learco Rabotti (Italy) Radio Tech.

RESTORING OLD EQUIPMENT

How did you SOLVE a problem when restoring a receiver ? Drop us a note telling how you did it.



WORKING ON A ZENITH TRANS-OCEANIC

Chassis 5G40, R250/URR

In the late 1940's, the hotel where I worked had just about the world's worst BC radio reception. It was a steel-frame structure, covered with poured concrete and dubbed "*modern-fireproof*" and also "*BC proof*". On the inside were lots of fluorescent lamps, electric motors, cash registers and other sources of man-made interference.

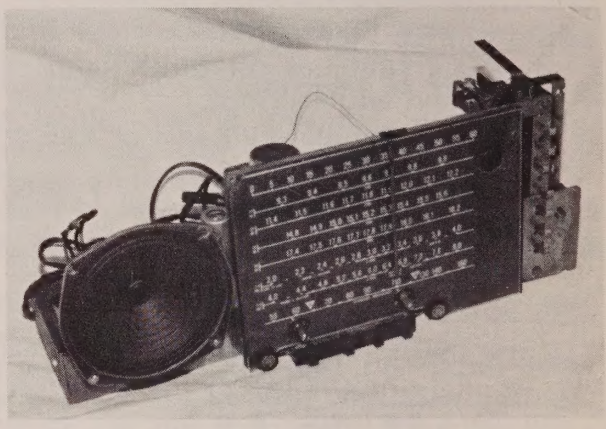
The only radios which seemed to overcome these obstacles were a large *MAJESTIC* in the barber shop and a cathedral in the bar. Perhaps the reason was that each had an outdoor antenna, i.e. lengths of wire strung along the side of the building.

Sometimes a guest would arrive and bring a *ZENITH* portable AC-DC, and battery radio. When delivering luggage or ice to their rooms, I would notice that these "*suitcase cloth*" covered ancestors of the *ZENITH TRANS OCEANIC* with their "*Wave Magnet*" antennas would play without too much interference.

A couple of years later, while working in a radio shop, I worked on quite a few early loktal tube Trans-Oceanics and noticed that they played quite well. A common complaint was that the filter condensers and voltage dropping resistors would age and lower the filament voltage on the oscillator tube and drop it out of oscillation. The shop owner had me juggle and change resistors to raise the voltage up to 1.5 volts. I questioned this move, saying the condensers should be changed first, which might solve the whole problem. His reply was "*You don't hear any hum, do you?*" After all, he was the boss.

Some years ago, Fair Radio Sales of Lima, Ohio, offered for sale junked chassis of the R250/URR, the military version of the Trans-Oceanic. They did not guarantee any degree of completeness. Out of curiosity, I ordered one and received a chassis without tubes, output xfmr, speaker and loop antenna. Looking in Rider's manual, I found chassis 5G40 which was similar except for the power supply.

I replaced the missing parts and started to do some checking. I found the filter condenser and the selenium rectifier shorted. I replaced the filter with a multi-section Sprague and the selenium with a silicon diode.



The power supply resistors were burnt and changed in value and the ballast tube was missing. I replaced the ballast with a 1K 5 watt resistor and juggled the equipment side until I had approximately 2.6K in series with it. This was done with a 30 ohm 1w. resistor bridged across the 1L6 filament socket lugs and proper voltages on the tubes. With the voltages in the ball park, I put a 445khz. signal thru a condenser on the converter plate and had plenty of gain plus good AVC voltage, so I did a "*by-ear-alignment*".

I substituted a ferrite loop for the loop antenna and a scanner antenna for the "*pole-antenna*" (see print). Putting a signal tracer on the converter grid I was rewarded with good, loud, tunable signals on all bands, and a rough check of the oscillator circuit revealed no glaring faults. So when I obtained my 1L6 and inserted it, I had a good-performing radio.

Out of curiosity, I ordered the instruction book from Fair Radio Sales – a very detailed book, well illustrated and with detailed diagrams – shows the tuned circuits in all the different band positions. Sometimes I'll wire in and check battery operation.

– Rodney Schrock, KA3MNJ

RECENT RADIO and ENTERTAINER OBITUARIES

by Dick Waddell

Gary Cummings (46 yrs.)
Former V.P. and general manager of CBS affiliate

Dan Rowan (65 yrs.)
Straight man in "Laugh-In", etc.

Jackie Vernon (63 yrs.)
Comedian on Johnny Carson and Merv Griffin shows.

"Kid" Chessell (82 yrs.)
TV actor on Bob Hope shows,etc.

Joseph Flaherty (82 yrs.)
Pioneer broadcaster since 1922, Chief engineer WDAF.

Ed Sanders, W2VM (74 yrs.)
Retired Mgr. FCC Monitoring stat.

Ireene Wicker Hammer (86 yrs.)
"The Singing Lady" on the air from 1933 to 1975. Recipient of 30 Awards.

Harold Dougherty (65 yrs.)
Vice-Chairman CCIR. Authority on radio propagation.

Elizabeth Corday (75 yrs.)
TV producer of "Day of Our Lives"

George Marriott (68 yrs.)
Retired announcer/writer WGY

Louis Fein (70 yrs.)
Helped develop Raydac computer,etc.

David Bodle (82 yrs.)
Authority at Bell Labs on lightning phenomena and communication.

Transistor Pioneer Brattain Dies at 85

SEATTLE — Walter Brattain, 85, a co-inventor of the transistor 40 years ago, died in a nursing home here last week of Alzheimer's Disease.

Dr. George H. Brown; Led Research at RCA

Dr. George H. Brown, former executive vice president for research and engineering at the RCA Corporation who led the company's development of color television, died Friday at the Princeton (N.J.) Medical Center after a long illness. He was 79 years old and lived in Princeton.

Phillip Smith 82 yrs.)
Inventor/designer at Bell Labs of antenna and microwave trans. lines.

Woody Herman (74 yrs.)
Popular "big band" leader

Murdoch McPherson (52 yrs.)
Sportscaster & Program Host BBC

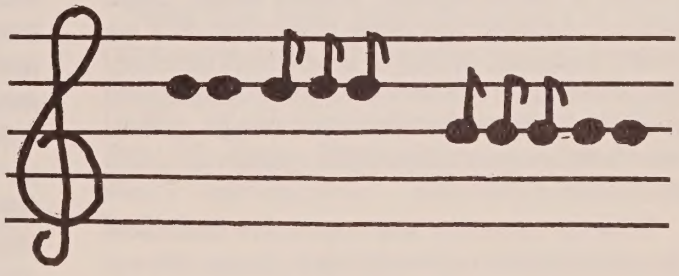
Morrill Cody (86 yrs.)
Foreign manager Radio Free Europe

Michael Kory (60 yrs.)
Former V.P. Emerson Radio Corp.

Lucy Monroe (80 yrs.)
Big time radio singing star

SECRET CODEGRAMS VIA MUSIC

by D. Kenneth Eneph



Not widely known, except to some cryptologists,was the method of coding messages utilizing musical staffs and notes with radio-facsimile transmission and reception. We saw some of this during WW2.

The wide range of possible combinations of the different notes, timing, and instructional signs coupled with combinations of audio tones (frequencies) offered many avenues of "*invisible*" intelligence transmission and reception. (The universal reference pitch is A = 440 Hz. of course.)

Tschaikowsky's Piano Concerto in this form for example could carry a basketfull of intelligence. But it didn't take the surveillance crews very long to catch on to the system. First, why would anyone bother to send by radio-facsimile material like this when it can be found in a library virtually anywhere on the globe? Aha!

BOOK & MAGAZINE REVIEWS

by Ernest Hathaway

RADAR HISTORY AT ITS BEST

Technical history of the beginnings of RADAR, **by S. S. Swords. London: Peter Peregrinus Ltd., 1986. IEE History of Technology Series, no. 6. (No. 2 in this series is Phillips'** *Early Radio Wave Detectors*.**)**

Technically minded radio historians will find much delight in a careful study of Sword's first-rate text on early radar history. The reader need not be a radar engineer, for the book begins with a fine introduction to the mechanics of simple pulse radar systems before launching into its extensive international historical review. Starting with radar's visionaries (Nikola Tesla and Hugo Gernsback are prominently mentioned), Swords takes us all over Europe and the United States, and also into Russia and the Far East, to review radar developments up to the second World War.

Approximately a quarter of the text covers early radar technology in Great Britain, and deservedly so. It's here that the reader can peruse schematics and descriptions of the famous Chain Home transmitters and receivers, the radar that immeasurably aided the English victory in the Battle of Britain. Details of the modulators, antenna design, target location methods, and other fascinating data are clearly presented. A final chapter covers the cavity magnetron, used in mid-war airborne systems (did you know that several prototype maggie cavities were built using a Colt revolver cylinder as a drill jig?!)

With its extensive and impressive references Swords' readable technical review of radar belongs on every radio historian's bookshelf.

Reviewed by: **Richard Ferranti**
MIT Lincoln Laboratory

COLLINS RADIO COMPANY

Bill Orr, W6SAI, has done it again... another excellent historical article..this time on Art Collins and his company... See Dec. '87 *HAM RADIO* magazine.

He covers Art's early amateur radio work as W9CXX and the equipment he provided for Byrd's South Pole expedition. Early transmitters, including the famous Model 150-B, are well illustrated which I am sure will increase interest and value among collectors. Art Collins became a Silent Key, Feb. 25, 1987.

WAVEFORMS

A History of Early Oscillography

by V. J. Phillips

ISBN 0-85274-274-6

Publisher: Adam Hilger, Techno House Redcliffe Way, Bristol BS1 6NX, England

A copy of this highly specialized book was recently given to the AWA library by its author, Dr. Vivian Phillips. It represents several years of dedicated research on a subject rarely found in print. The author covers the field from crude spark observations with rotating mirrors (1830) to the development of the modern cathode ray tube.

Although primarily a source of information for the engineer or research person, I found it fairly easy reading and enjoyed the hundred sketches and photographs of early devices used to determine wave forms. Dr. Phillips is an AWA member and author of an earlier book: ***Early Radio Wave Detectors*.**

APOLOGY -----

I want to apologize to AWA members who may have been misled and purchased the book titled RCA reviewed by our book editor Ernest Hathway in the August '87 OTB.

There are reasons to believe there may be some mis-information in the book. Readers are advised to check other sources. Mr. Hathaway has been reprimanded and promises to be more thorough in the future.

--BK

On Review

INVENTING AMERICAN BROADCASTING: 1899 - 1922

by Susan J. Douglas

John Hopkins University Press
701 West 40th Street, Suite 275
Baltimore, Maryland 21211
Price: $29.50

In her Introduction to **Inventing American Broadcasting, 1899 - 1922**, Susan J. Douglas writes that this book is an account of "*the social construction of radio*". Douglas' work tells about early radio inventions and their inventors (especially Stone, Fessenden, and de Forest), the institutions that influenced early wireless technology (General Electric, American Telephone and Telegraph, and the Navy), and places this history into a larger cultural context of America in the first two decades of this century. To accomplish her ambitious task, Ms. Douglas has examined major collections of radio materials, including the George Clark collection of radioana at the Smithsonian Institution and the Marconi Company archives in Chelmsford, England.

Perhaps the most valuable contribution of **Inventing American Broadcasting** is its examination of the role of the press in furthering the development of wireless technology, for as Douglas writes "*Prevailing stories about a particular technology legitimated some men as 'rightful inventors' while denying recognition to others.*" She shows the ways in which men like Marconi and the corrupt partner of the American De Forest Company, Abraham White, manipulated public opinion through newspaper stories, and made the press the primary advertiser of the technology they were promoting. Later, in a fascinating chapter entitled "*The Social Construction of American Broadcasting, 1912 - 1922*" she examines the romantic characterization of wireless amateurs in the popular media, particularly during World War I when articles like "*Wireless Amateurs to the Rescue*" exhorted youth to become a "*a third arm in the defense of the country*".

Everything about this **Inventing American Broadcasting** suggests that Ms. Douglas has brought great care as well as enthusiasm to her study. The biographical information of men like Stone, Marconi, de Forest, and Fessenden is fresh, detailed and insightful. We learn that John Stone Stone acquired his unusual name because his mother and father had the same last name. Many of the illustrations which were culled from the Smithsonian have rarely been presented before. These include a photograph of the de Forest exhibit at the St. Louis Exposition of 1904 which featured "*Wireless Auto No. 1*", surely one of the first cars so equipped. The scholarship is solid, and the thirty-one pages of notes in themselves constitutes a valuable resource for anyone interested in further study. This book deserves the serious attention of readers interested in that important period before the advent of the radio boom of the twenties and thirties.

Reviewed by Tom Lewis
Skidmore College, Saratoga Springs, NY

"THE A.W.A. REVIEW"

Sorry-- all copies of the first edition of the A.W.A. Review (Vol. 1) are sold. Copies are no longer available and no plans for reprints.

SURPLUS SALE AT ANNEX

AWA has been given thousands of used (and some new) tubes to dispose of. In addition, the Association has an enormous collection of surplus radio magazines, (*QST, CQ, 73, etc.*). They will be available at the May 7 "*Spring Meet*". See notice elsewhere in Bulletin.

Minature tubes:	**15¢ each or 10 for $1.00**
Other tubes:	**30¢ each or 4 for $1.00**
Magazines:	**15¢ each or 10 for $1.00**

(Proceeds to Museum Fund.)

CORRECTION: In the November, 1987 issue of the OTB on page 12, at the bottom of the first column, the 58-C tuned the 200-400 kc. range, not the 200-400 mc. range as printed.

THE MUSEUM

NEW EQUIPMENT
in A.W.A. Museum
(sets, parts, magazines, books, etc.)

W1VSR, W2BJI, W2VDI, K2LP, W2YE, W2PMH, W2PHT, K3HOX, W6SAI, W9GFS, W9NZF S. Conklin, Ross Smith, R. Walz, P. Yanzer, C. Spivey, G. Burlingham, V. Phillips, Bob Lozier, B. Roloson, M. Bancroft, F. Stewart

MUSEUM ACTIVITY

SPRING SCHEDULE:

--A meeting of the Museum Committee is scheduled in late March to review activities and new displays. Museum Guide scheduling will be determined in early April by co-ordinator Art Kelly. He is seeking new volunteer guides. If interested, telephone (716) 657-6991.

--We're again looking for volunteers to work in the Annex. Projects include classifying tubes and other pieces of equipment. Notices will be sent. I am particularly grateful to Mani Pires, John Ward, Mike Csontos and Russ Maurer for restoring various pieces of A.W.A. equipment in their home workshops.

--AWA has been given a large quantity of items by members (and friends) who are moving or cleaning out their basements. They expressed the desire the equipment be sold with proceeds to the Museum Maintenance Fund. Much of the material will be auctioned at the Annual Local May 7 Meet.

--BK

DID YOU KNOW – that the first general use of neon tubes for signs (advertising purposes) was developed in France in 1910 by Georges Claude.

A.W.A. HISTORICAL MUSEUM

East Bloomfield, N. Y.
Free Admission

Museum Hours:

May 1st through October 31st
SUNDAY 2 TO 5 PM

June 1st through August 31st
SATURDAY 2 TO 4 PM
WEDNESDAY 7 TO 9 PM

Open to groups by appointment
Tele. (716) 657-7489

Museum Tele. (716) 657-6260

CURATOR Bruce Kelley, W2ICE

COMMITTEE

Charles Bliley, K3NAU
Dick Fish, W2OWF
Arthur Kelly, W2ROB
Roland St. Louis, K2LKH
Steve Sykes, KD2OM

MUSEUM MAINTENANCE and GUIDES*

Dave Atkins
Al Bowman, W2ZUX
Dave Crothers
Paul Feldman
John Ward
Glenn Fuller, N2EXL
Bob Hobday, N2EVG
Russ Maurer
Mani Pires
Doug McManus
Ed Maher, WB2ZJY
Brad Mitchell, WB8YGG
Ron Nelson, KA2GLG
Don Ray, WA2PKS
M. Rosenfeld, KA2JAJ
Bill Shaw, W2HYN
Tony Prasil

*(*Officers and Directors also act as Museum guides.)*

AMATEUR OPERATION

W2AN: Geo. Batterson and B. Kelley

SEEKING INFORMATION

AMELIA EARHART researcher seeks data regarding her fatal last flight; especially radio data centering around the final hours of her flight. I am leading an expedition to the Pacific next year to search for the Earhart crash site and will publish my book when I return. Don Wade, 560 Campbell Hill, Marietta, GA 30060 – 404-426-7883.